NETWORK WORLD

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Novell tool offers link to OS/2 nets

By Laura DiDio
Senior Editor

NEW YORK — Novell, Inc. last week unveiled an application development tool that will bridge the gap between proprietary NetWare- and OS/2 LAN Manager-based networks.

The introduction of NetWare Remote Procedure Call (RPC) will help Novell answer charges that it has not provided a coherent strategy for accommodating networks based on Microsoft Corp.'s OS/2 LAN Manager.

NetWare applications developed using NetWare RPC will be able to access data on OS/2-based servers using Novell's proprietary Sequenced Packet Exchange (SPX) protocol instead of Microsoft's Named Pipes application programming interface (API). The capability will help Novell compete against emerging LAN Manager-based local net products.

"It gives our NetWare users a way to tap into OS/2 LAN Manager products and use those devices as application servers," said Dwight Davis, director of marketing with Novell's Development Products Division.

Although Novell will eventually support Named Pipes, the SPX interface will continue to be offered as a more efficient way to

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IBM's John Akers (left) and Siemens AG's Karlheinz Kaske discuss the transfer of Rolm operations at a New York press conference.

IBM, Siemens carve up Rolm operations

IBM sheds PBX manufacturing, development; will market switches through joint venture unit.

By Bob Brown
Senior Writer

NEW YORK — IBM last week said it will sell to Siemens AG the development and manufacturing assets of its unprofitable Rolm Systems Division and will team up with the West German firm to market and service Rolm PBXs.

The move lets IBM cut its Rolm losses. It also gives Siemens the presence it needs to compete effectively in the U.S. private branch exchange market, analysts said. But IBM/Rolm customers face a period of uncertainty while the companies consolidate their products and distribution channels (see "IBM/Siemens deal leaves some Rolm users worried," page 6).

According to analysts, Rolm lost more than $100 million in the first six months of the year despite increasing its share of the U.S. PBX market to about 18%.

Financial terms of the deal were not disclosed.

The agreement signals a further retreat from telecommunications for IBM, which bought Rolm in 1984 for about $1.5 billion. Analysts said IBM never fulfilled its goal of merging its expertise in computers with telecommunications technology. IBM earlier abandoned its interest in Satellite Business Systems, a satellite carrier, and sold off its investment in MCI Communications Corp.

Under terms of the agreement, IBM will transfer its switch development and manufacturing assets to a wholly owned subsid-

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Dear Santa: Bring PCs, ISDN and open systems

"Managers were nestled all snug in their beds, while visions of OSI danced in their heads . . ."

By Bob Brown
Senior Writer

NORTH POLE, Arctic Circle — Santa Claus has his work cut out for him this holiday season, as communications managers are wishing for everything from faster implementation of Integrated Services Digital Network to more responsive vendors.

In what has become a holiday tradition, *Network World* asked users to share their Christmas wish lists. Many said they hope to find open systems under the tree, adding that lower priced communications products and services would make great stocking stuffers.

PCs on earth

Demonstrating the true Christmas spirit, Scott Roney, manager of telecommunications at Dean Foods in Franklin Park, Ill., said he wishes for "PCs on earth for all good telecommunications managers."

Roney also wants a stocking "big enough to hold all the

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First National Bank of Chicago's Timothy Wayman emphasizes that EDI cuts paper transactions.

EDI users talk strategy at summit

By Bob Wallace
Senior Editor

WASHINGTON, D.C. — A meeting of the nation's oldest electronic data interchange (EDI) group last week witnessed the birth of an international EDI user association and the first-ever gathering of a new cross-industry EDI group.

Also at the Transportation Data Coordinating Committee/Electronic Data Interchange Association's (TDCC/EDIA) 20th annual conference here, Digital Equipment Corp. pledged to provide EDI software and services that conform to open EDI standards. Founded in 1968, TDCC/EDIA was chartered to promote EDI use and the adoption of standards.

DEC's planned EDI products will support the ANSI X.12 stan-

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NETLINE

NEWSPAPER

FEATURE

Communications budgets gain trade-secret status

By Bruce Guptill
Features Writer

Communications departments are fast becoming the wild card in corporate America's poker game. And, according to *Network World*'s third annual budget survey, many players in today's high-stakes business game are playing their cards very close to the vest.

PANEL OF COMMUNICATIONS USERS

Based on interviews with *Network World*'s Panel of Communications Users — communications managers located throughout the U.S. — upper management is realizing two things: communications is a sure bet as a strategic weapon, and you don't show your cards to other players.

Budgets continue to increase, but it's more and more difficult to find out where the

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Users meet to figure out what's slowing ISDN use

Implementation of the technology is taking too long because of technical and policy problems.

By Wayne Eckerson
Staff Writer

NEW YORK — A panel of users and vendors last week tried to cut through the hype surrounding Integrated Services Digital Network technology and identify the reasons for the slow implementation of ISDN.

Panelists at a seminar entitled "ISDN: What's Holding Up Implementation?" said technical problems and a number of policy questions must be addressed before widespread use of ISDN becomes a reality. The seminar was hosted by the Center for Telecommunications and Information Studies at Columbia University here.

Kenneth Phillips, vice-president of Citicorp's Office of Telecommunications Policy, based here, questioned the optimistic projections of demand for ISDN issued by vendors and carriers.

No reason to migrate

Phillips said many large business users have little reason to migrate to ISDN because they are getting many ISDN-like capabilities through private networks that incorporate features such as sophisticated T-1 multiplexers and digital circuits.

Phillips also said legal issues, including concerns about invasion of privacy, will slow the development of ISDN. He said ISDN applications such as automatic number identification (ANI) may violate state privacy laws (see "Providers of ANI face privacy hurdle," page 11). ANI gives the called party the phone number of the calling party.

Phillips also raised the question of who will pay to provide ISDN, and he conjectured that carriers might be tempted to offer ISDN services to customers below cost and subsidize expenses with profits from other parts of their business. Phillips said ISDN users should pay the full cost for the services they receive.

Tempered optimism

Not all panelists were skeptical about ISDN's prospects. Wayne Felts, division manager of ISDN implementation at Bell Communications Research, Inc. in Livingston, N.J., said ISDN will be successful because it will help meet growing demand for digital communications, higher transmission rates and multivendor interoperability.

However, Felts acknowledged that there are two factors currently stalling ISDN implementa-

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Users, carriers christen first undersea fiber cable

TAT-8 provides digital pipe for voice and data.

By Anita Taff
Senior Correspondent, Washington

NEW YORK — Users and carriers last week gathered in celebration as they kicked off service on TAT-8, the world's first undersea fiber-optic cable.

TAT-8 will provide users with a digital pathway for data, voice and video services faster and more reliably than previous cables, according to AT&T, which is one of the major owners of the cable, along with British Telecommunications plc and France Telecom.

First users

American Express Co. in the U.S., British Airways in England and Honeywell Bull, Inc. in France took center stage as the first three announced customers for TAT-8 services. Representatives from each of the companies said the major factors prompting them to purchase transmission services over TAT-8 are reliability, efficiency and diversity of routing.

Executives from AT&T, British Telecom and France Telecom announced the commercial rollout of the cable, which has a capacity of 560M bit/sec. TAT-8 will support traffic equal to the combined capacity of the seven analog copper cables currently traversing the Atlantic Ocean.

TAT-8 will become an important link in providing a global intelligent network to the major cities of the world, according to executives from the three carriers. Plans are already under way for TAT-9, a second fiber-optic cable with twice the capacity of TAT-8 that will link the U.S. with Europe in 1991.

AT&T is also working on a transpacific cable scheduled for completion in April 1989.

AT&T, the carrier that owns the largest share of the new fiber cable, will offer all of its existing international services over TAT-8, including videoconferencing, switched voice services and private-line Accunet lines ranging in speed from 56K bit/sec to 1.5M bit/sec.

The fiber-optic cable will be particularly useful for interactive

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Briefs

Equal opportunity employer. Federal Communications Commissioner Patricia Diaz Dennis is reportedly being considered for the top post at the U.S. Department of Labor by President-Elect George Bush. A staff member in her office admitted that Diaz Dennis is under consideration. Prior to serving on the FCC, Diaz Dennis was a member of the National Labor Relations Board, an independent federal agency.

Network World has also learned that Sherrie Marshall, director of the FCC's Office of Legislative Affairs, is being considered to fill one of the empty FCC commissioner slots. She is temporarily serving as a member of the Bush transition team.

Board with ISDN. Fujitsu America, Inc.'s ISDN Systems Division last week announced a $725 Integrated Services Digital Network terminal adapter called the SRS-300. Designed for use with Basic Rate Interface 2B+D ISDN service, the SRS-300 comes with two RS-232-C ports. Basic Rate Interface ISDN supports two 64K bit/sec digital B channels for voice or data and one 16K bit/sec digital D signaling channel. The SRS-300 supports asynchronous or synchronous data and includes an integrated X.25 packet assembler/disassembler that enables users to transmit X.25 packets at speeds up to 19.2K bit/sec.

Scandal hits NTT. Nippon Telephone and Telegraph Corp. Chairman Hisashi Shinto abruptly resigned last week amid allegations that he is involved in a stock-trading scandal that is rocking Japan's business community. Shinto is suspected of participating in the purchase of 10,000 shares in Recruit Cosmos Co. before the stock was made available to the general public. So far, the scandal has ended the careers of 16 prominent government and business figures in Japan.

Prime cuts. US Sprint Communications Co. last week announced price cuts for its interstate business services, including Dial 1 WATS. Effective Jan. 5, costs for the services will be cut an average of 3.6%, depending on the service. Sprint Dial 1 WATS subscribers will get the largest break, with monthly fees dropping from $59.55 to $12 and a rate drop of 3.6%, for an average savings of 7.5%. The rate cuts follow a similar announcement by MCI Communications Corp. earlier this month ("MCI reduces long-haul rates 3.9%," *NW,* Dec. 12).

Marriage of convenience. Advanced Telecommunications Corp. (ATC), a regional long-haul carrier, announced last week a definitive agreement to acquire ClayDesta Communications, Inc., a Midland, Texas-based long-distance service provider, for $43 million. The agreement is further evidence of consolidation in the long-distance industry (see "Telcos join forces as industry changes," page 13). ATC merged with Microtel, Inc., another regional carrier, in June.

ClayDesta provides long-distance service to 55,000 business and residential users in Texas. The carrier also offers private lines throughout the state. ATC and ClayDesta hope to have the deal completed by March. The combined firm will have more than 205,000 customers and 1,300 employees.

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EDI users talk strategy

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dard, the EDI for Administration, Commerce and Trade (EDIFACT) standard and X.400, said Henry Ancona, vice-president of business and office information systems for DEC.

DEC said it will work closely with value-added net providers to ensure compatibility between DEC's EDI products and the network services that customers use to handle EDI transactions.

EDI pioneers, including the Department of Defense and the First National Bank of Chicago, cautioned other users in attendance that EDI can provide a competitive edge only when combined with operational changes in such areas as manufacturing, distribution and sales.

More than 2,300 people flocked to the two-day TDCC/EDIA show, which featured more than 90 exhibits and 60 user-led educational seminars and workshops. A conference organizer said roughly 75% of the attendees were users.

At the conference, Marshall Spence, head of the EDI Council of Canada, announced the formation of the International Congress of EDI Users — a group comprising users from Australia, Canada, Japan, New Zealand and the Pacific Rim countries.

"There is a very high degree of interest in EDI in these countries," Spence said. "We will exchange information about our EDI implementations and discuss EDIFACT."

EDIFACT is an emerging international EDI standard. The new users group will meet for the first time in Vancouver in August 1989, he said.

In the U.S., expanding use of EDI necessitated creation of a cross-industry EDI user association, the EDI Council of the USA (EDICUSA), which held its first meeting at the show.

EDICUSA, which will meet again in three to six months, also named eight users to its board of directors.

"There [previously was] no EDI users group covering a wide spectrum of [vertical] industries in the U.S.," said newly named EDICUSA Chairman Vincent Calandra of Union Carbide Corp.

"EDICUSA's main objective is to serve as a forum for the discussion of important EDI issues, successes and opportunities," Calandra said.

Users' key concerns

Prior to the inaugural meeting, EDICUSA surveyed almost 300 TDCC/EDIA members, asking them to cite what they consider three top issues the users group should address, Calandra said. Most of the 65 respondents listed standards, the increasing need for EDI training and international EDI as major concerns.

The group decided to form committees to deal with each of the three issues and to set up a fourth committee to deal with vendor relations.

EDICUSA's proposed membership scheme, which restricts membership to TDCC/EDIA members, drew fire from users.

"We have to relax that requirement," said Geoff Cooper, transportation services supervisor for Bethlehem Steel Corp. in Bethlehem, Pa. "We should have two types of memberships, one for EDIA members and a second for other users."

Most attendees backed Cooper's suggestion. However, attendees of the EDICUSA meeting were split on whether vendors that sell EDI network services and software should be allowed to join the group.

TDCC/EDIA President and Chief Executive Officer Jerome Dreyer said the group will take both issues under consideration.

The benefits of EDI

Users at the TDCC/EDIA conference detailed the benefits they have gained from their EDI implementations but stressed that technology alone is not an instant cure for companies' business ills.

"EDI can produce significant savings by replacing paper transactions with electronic transactions," said Jack Katzen, the Department of Defense's assistant secretary of defense for production and logistics.

"But the real payoff comes when EDI is recognized as an enabling technology and linked with other management initiatives to change the way we do business," he said.

The banking industry has been slow to adopt EDI, according to Timothy Wayman, who heads First National Bank of Chicago's EDI program. "If our industry is to continue to play a pivotal role in the corporate financial services business, we must act decisively and quickly to respond to corporations' EDI needs."

Pioneers offer EDI experiences, advice

WASHINGTON, D.C. — The Department of Defense and Digital Equipment Corp. last week told users how electronic data interchange (EDI) has changed the way they do business.

The users, both EDI pioneers in their respective areas, also offered potential EDI users advice and called for a broader range of EDI products at the Transportation Data Coordinating Committee/Electronic Data Interchange Association's 20th annual conference here.

EDI is the electronic computer-to-computer transmission of commonly formatted business transactions such as purchase orders and invoices.

The Defense Department already has 30 independently developed and maintained EDI pilot projects under way within the department, said Jack Katzen, the department's assistant secretary of defense for production and logistics.

"We accrue valuable EDI experience from these [projects]," Katzen said. Most of the projects deal with the electronic transfer of basic procurement data between the department and a small number of vendors, he added.

EDI will be the standard for doing business with the Defense Department by the early 1990s, Katzen predicted. "But we can't go it alone. We need vendors to make affordable [personal computer-based] EDI software for small businesses."

DEC and EDI

Like the Defense Department, DEC plans to quickly broaden the scope of its EDI programs.

DEC, an EDI user with plans to bring EDI products to market, will implement EDI in its 40 largest manufacturing facilities and in most major nonfactory sites, said Winston Hindle, senior vice-president of corporate operations for the firm.

DEC expects to handle 80% of all purchase orders, invoices, payments and acknowledgments exchanged with suppliers using EDI, Hindle said.

DEC's Augusta, Maine, factory took part in an EDI pilot with suppliers — a program that changed the way the minicomputer giant viewed the technology.

"We didn't start out with the idea that EDI [would require us] to change our standard business practices, but we learned it was impossible not to," Hindle said.

Hindle said he agrees with EDI consultants' 80:20 rule, which states that the changes a company goes through when moving to EDI are generally 80% business practice and 20% technical implementation. "The technical implementation turned out to be the easy part," he said. "We had to examine [our entire] business. We had to change the behavior of the [Augusta] plant itself."

Used in conjunction with advanced manufacturing applications, EDI cut the time it takes to process purchase orders from five weeks to three days, he said.

EDI also cut the cost of creating a purchase order from $125 to less than $32, Hindle added. Acquisition planning dropped from several hours a week to 10 minutes a week.

— Bob Wallace

Banks hope to cash in on branch-to-host networks

Automation seen as boon to service and profits.

By Jim Brown
New Products Editor

NASHVILLE — Electronic banking managers meeting here last week detailed plans for linking personal computers and local networks in branch offices to host processors to improve customer service and support new applications.

Attending the Bank Administration Institute-sponsored Retail Delivery Systems Conference, dubbed ATM11, managers from some of the nation's largest banks discussed how branch networking efforts will increase bank productivity. With on-line access to host processors, account representatives will be able, for example, to open accounts and process loans more quickly.

In addition, account representatives, commonly called personal bankers, will be able to download customer account information from a mainframe-based central information file (CIF). Armed with that CIF data, account representatives can then sell customers deposit accounts or loans that fit their needs.

Increased sales

While the productivity gains are important, bankers say it is increased sales that would justify the hefty investment in the hardware and software needed to support this branch-to-host concept known as platform automation.

"The only way you can really justify a project like this is with increased sales," said Larry McNabb, executive vice-president for payment services with San Francisco-based Bank of America National Trust & Savings Association.

Under a platform automation

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FCC releases terms of deal MCI offered Holiday Corp.

Request filed by AT&T prompted disclosure.

By Anita Taff
Senior Correspondent, Washington

WASHINGTON, D.C. — The Federal Communications Commission last week released details of the off-tariff deal MCI Communications Corp. offered Holiday Corp. — a deal that prompted AT&T to file its controversial Tariff 15.

The information was made available in response to a request filed by AT&T under the Freedom of Information Act. In the request, AT&T said it could not comment effectively on the pricing practices of its competitors without access to the data. *Network World* also obtained from the FCC copies of the contract offer MCI submitted to Holiday.

In its May Tariff 15 filing, AT&T justified Tariff 15 on the grounds that MCI had offered services to Holiday at lower than tariffed rates. But AT&T was unable to document the terms of the deal.

In September, the FCC ordered AT&T, MCI and US Sprint Communications Co. to submit information on all single-customer deals arranged during 1988.

MCI and US Sprint asked the FCC to keep their customer data confidential, while AT&T provided a list of single-customer services filed under its tariffs, which are publicly available.

Gerald Brock, chief of the Common Carrier Bureau, granted AT&T's request for information because he felt the final decision on Tariff 15 would depend, in part, on a comparison of MCI's offer and the competitive pricing plan AT&T filed for Holiday under Tariff 15.

"While the particular details of MCI's offer might not speak to each question at issue, they certainly will clarify and possibly resolve key factual and legal disputes," Brock said. Information regarding other single-customer arrangements of MCI and US Sprint will remain confidential.

The information released last week shows that AT&T was accurate in its assessment of the discount pricing plan offered to Holiday. AT&T correctly stated that Holiday would be required to commit to $500,000 in monthly charges for a one-year period. In return, MCI would offer the following discounts: 2% on charges of up to $500,000, 4% on charges between $500,000 and $1 million, 6% on charges between $1 million and $1.5 million and 8% on charges over $1.5 million.

AT&T was also correct in claiming that MCI offered Holiday a second contract option under which Holiday could have entered into a three-year commitment in return for even greater discounts.

The contracts released last week show that during any month in which the $500,000 minimum was not met, Holiday would have been required to pay a penalty equal to 3% of the difference between actual charges and the monthly minimum.

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"Know how much it costs to add highly trained people to your data networking staff? Nothing."

—Joe Frizzell, Manager
AT&T Data Maintenance Operation and Control Center
Dallas, Texas

"You can never have enough people overseeing your company's data transmission. That's the theory behind AT&T Data MOCCs (Data Maintenance Operation and Control Centers). Think of it as instantly having an additional staff of highly trained, experienced technicians working to back up your entire DATAPHONE® II network.

Our network and our data communications equipment are designed to work together in perfect harmony —a combination of quality and accuracy unmatched in the business.

From planning to installation, to remote network monitoring and troubleshooting, we're always there. Data MOCC technicians work with you on a regular basis tracking down problems, arranging for repair, giving you total end-to-end support to help you keep your network performing flawlessly day after day.

And the cost? If you lease or rent AT&T data communications equipment, or own it with our valid service contract, adding Data MOCC won't cost you a single penny extra. Not a bad deal, right? And it's the kind of service you couldn't buy from another vendor at any price. Because only AT&T offers it.

The highest quality products and the highest commitment to supporting them. If you think Data MOCC looks like a pretty good deal, you're right. And just think of how good you'll look for using it."

To find out how much more you get with AT&T DATAPHONE II data communications equipment, see your AT&T Account Executive, your authorized AT&T Reseller, or call 1 800 247-1212, ext. 717.

AT&T

The right choice.

IBM, Siemens carve up Rolm

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iary of Siemens called Rolm Systems, Inc., to be based in Santa Clara, Calif.

The agreement also calls for the establishment of a jointly owned business unit that will market and service products made by Rolm Systems in the U.S. This Stamford, Conn.-based company, simply called Rolm, will also service current Rolm users.

Siemens will fold these new U.S. operations into Siemens Corp., the existing holding company for its U.S.-based business units.

8750 rollout scrapped

IBM said it will scrap the European rollout of its problem-plagued 8750 switch — the European equivalent of the IBM 9751 PBX introduced in the U.S. last October — and market a Siemens-made switch, probably the Siemens Hicom, in its place.

The mainframe maker plans to market the 9751 switch and other Rolm Systems products in Canada, Japan and other countries. Siemens' existing sales channels outside of the U.S. will not be affected by the agreement.

IBM insisted it is not bailing out of telecommunications but that it is joining with Siemens to hasten the introduction of integrated voice/data products. IBM and Siemens said the agreement will lead to the development of improved PBXs and related products for users in the U.S. and abroad.

"I would absolutely not characterize [the agreement] as a scaling back of IBM's interest in telecommunications," said IBM Chairman and Chief Executive Officer John Akers, who made a rare press conference appearance.

Karlheinz Kaske, president and CEO of Siemens, said the agreement would "give customers a broader range of products and services with which to enhance their businesses."

The agreement, which analysts said would give Siemens the largest share of the world PBX market in terms of lines shipped, is still subject to regulatory review in the U.S. and Europe. A final contract will probably be signed early next year, Akers said. The agreement will have no material effect on IBM's earnings this year or next, he said.

New questions

The announcement ended months of speculation about a Rolm reorganization or sale but, at the same time, spurred a new batch of questions.

Because IBM's and Siemens' product lines and distribution channels overlap, the companies will have to work out a consolidation plan. Although the companies admit there is redundancy, they would not detail how that may be resolved.

"Siemens has some big decisions ahead of it," said Patrick Springer, director of strategic services consulting for Telecommunications Management Corp., a consulting firm in Needham Heights, Mass.

"IBM and Siemens say they want the new businesses to be lean and mean, so you have to wonder which switch architecture they are going to continue to fund since the two companies support totally different architectures," Springer said.

IBM's flagship switch, the 9750, supports from 100 to 20,000 lines. Siemens' top-of-the-line Hicom series, which is only sold in Europe, supports up to 3,000 lines.

Although the Hicom is smaller, it is not clear whether that is a limitation of its architecture or a by-product of European needs; European users generally use smaller PBXs than U.S. firms. It is conceivable that Siemens, in the long term, could base its products on the Hicom architecture.

Analysts rate IBM/Rolm's and Siemens' high-end switches almost even on overall technical merit but give Siemens the edge in that the Hicom switch already supports Integrated Services Digital Network.

However, IBM/Rolm products have an advantage in terms of their advanced distributed architecture and reliability, Springer said. The Hicom switches have a more complex architecture.

Although opinions varied about which switch architecture Siemens will turn to, Springer said he believes the company will back IBM because Ray AbuZayyad was named president and CEO of the new subsidiary. AbuZayyad is currently vice-president and assistant general manager of Rolm Systems, Communication Systems.

The companies' low-end switches are also somewhat redundant, said Steve Kropper, senior consultant at the Framingham, Mass., market research firm International Data Corp.

IBM/Rolm has the hybrid 9722 Redwood, which supports up to 144 lines, and the VS CBX, which supports up to 200 lines and can support other CBX add-on products. Siemens offers the line of Saturn switches, which support from 24 to 864 lines, and last week it announced a series of key systems that can support up to 120 lines.

As part of the agreement with Siemens, IBM will close the Colorado Springs plant where the Redwood is built and move the operation to Santa Clara. Although there is some speculation that this might mean the end for the Redwood, analysts pointed out that IBM recently backed the switch with the introduction of a product to link it to the IBM Application System/400 minicomputer.

The new setup

Siemens' new Rolm Systems subsidiary will consist of IBM/Rolm's development and manufacturing plants in Santa Clara and Austin, Texas, and Siemens Information Systems, Inc.'s telecommunications development operations in Boca Raton, Fla., as well as the company's manufacturing facility in Cherry Hill, N.J.

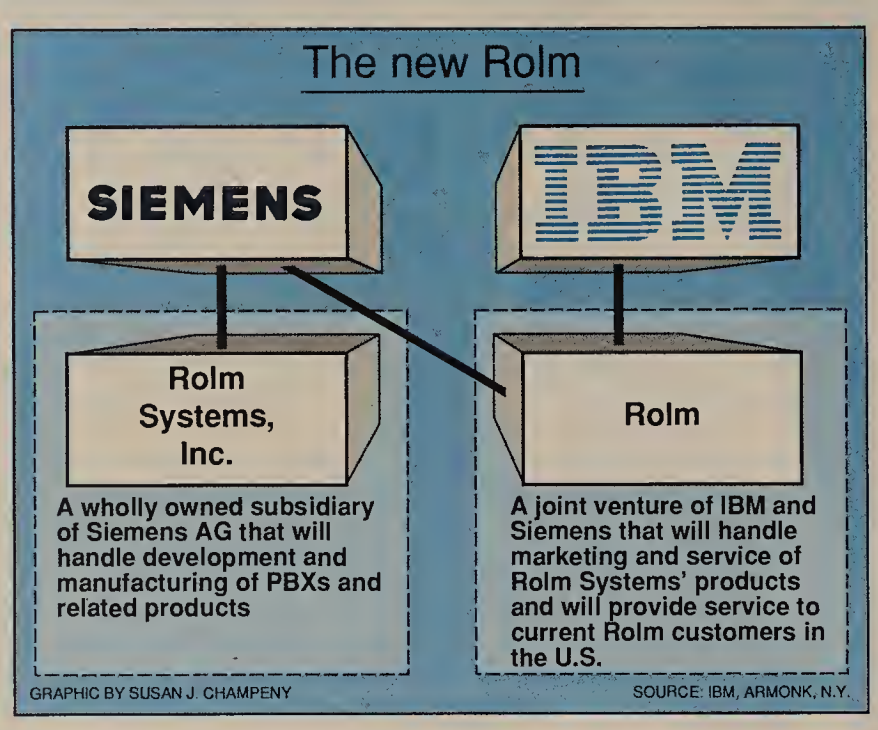
About 2,800 IBM/Rolm employees and 700 Siemens Information Systems employees will work for the subsidiary. This unit may also pick up some of the 550 IBM/Rolm employees from the Colorado Springs plant, which will soon be closed.

While the newly created Rolm marketing and service unit will handle the bulk of Rolm Systems' equipment sales, IBM's national accounts direct sales force will also sell Rolm switches. Analysts speculated that IBM's sales force will gradually be phased out of this process, leaving most of the marketing to the new Rolm unit.

Siemens said there are no plans to sell Rolm switches through Tel Plus Communications, Inc., a distributor of telecommunications equipment and a wholly owned subsidiary of Siemens Information Systems. Tel Plus and Rolm will be selling into the same territories, Kaske said.

Analysts said Tel Plus will inevitably be included in the Rolm marketing organization to eliminate redundancy.

H. Mitchell Watson, currently IBM vice-president of marketing and service, will become president and chief executive officer of Rolm.



IBM/Siemens deal leaves some Rolm users worried

Move viewed as IBM's escape from telecom; Siemens' involvement fails to instill confidence.

By Bob Brown
Senior Writer

NEW YORK — News that IBM will sell part of its Rolm Systems Division to Siemens AG was greeted by Rolm customers with a mixture of optimism, pessimism and confusion.

The users that appeared most concerned about the IBM/Siemens deal were those with large investments in Rolm equipment. Those users are heavily dependent on IBM/Rolm for support.

IBM last week said it will sell its Rolm product development and manufacturing facilities to Siemens, which created a new unit called Rolm Systems, Inc. to oversee those operations (see "IBM, Siemens carve up Rolm operations," page 1).

IBM and Siemens will share marketing and service responsibilities for Rolm Systems equipment in a new joint venture named Rolm. This group will also provide support for current Rolm customers.

Rolm user Chuck Garrison, vice-president of telecommunications and trading operations for the Chicago Board Options Exchange, said IBM has been sending mixed signals about Rolm for months. He said he views the agreement with Siemens as IBM's way of getting out of the telecommunications business.

"If they can't do the PBX part of the business, then they can't do the rest of the telecommunications business," said Garrison, whose organization maintains eight Rolm CBX IIs at its headquarters in Chicago.

Garrison said IBM/Rolm has stopped making an effort to develop new add-ons for CBX customers and has pressured customers to upgrade to the 9750 series of switches. Because Garrison chose not to upgrade, he feels service for his switches has declined.

Siemens' involvement "might only exacerbate the problems we've been having," he said, since the CBX switches are destined to become even less important under the IBM/Siemens partnership.

"I have not dealt with Siemens before and am not really interested in having a new vendor come in and try to prove itself to me," Garrison said.

Garrison said his organization will be in the market for some new switches over the next two years and that the IBM/Siemens announcement has come at a crucial time.

"With the mixed signals we've been getting from IBM, I'd have to look long and hard to go with IBM again," Garrison said. "I would have to see where they are next year. But I don't know that IBM can move that quickly."

One Rolm user who asked not to be named said he considers

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Network World picks top high-tech writer for post

FRAMINGHAM, Mass. — *Network World* last week appointed Charles Bruno to the post of assistant managing editor, news.

In his new position, Bruno will be involved in overseeing news-gathering operations and will help determine editorial strategy for the newspaper.

One of the most respected journalists in the high-tech field, Bruno brings a wealth of experience in reporting on the communications industry. Before joining *Network World*, he was a senior editor with *Computer Systems News*, where he wrote news and analysis on local net vendors and the network strategies of major systems manufacturers.

Bruno also served as data communications editor for *Computer Systems News*, overseeing a group of reporters that provided networking coverage for *Computer Systems News* and *CommunicationsWeek*.

Charles Bruno

"We're very excited to bring someone with Charlie's experience and knowledge on board," said Gary Beach, president of Network World Publishing, Inc. "This illustrates *Network World*'s continuing commitment to editorial quality."

Bruno, a graduate of Pace University in Pleasantville, N.Y., is married and has one child.

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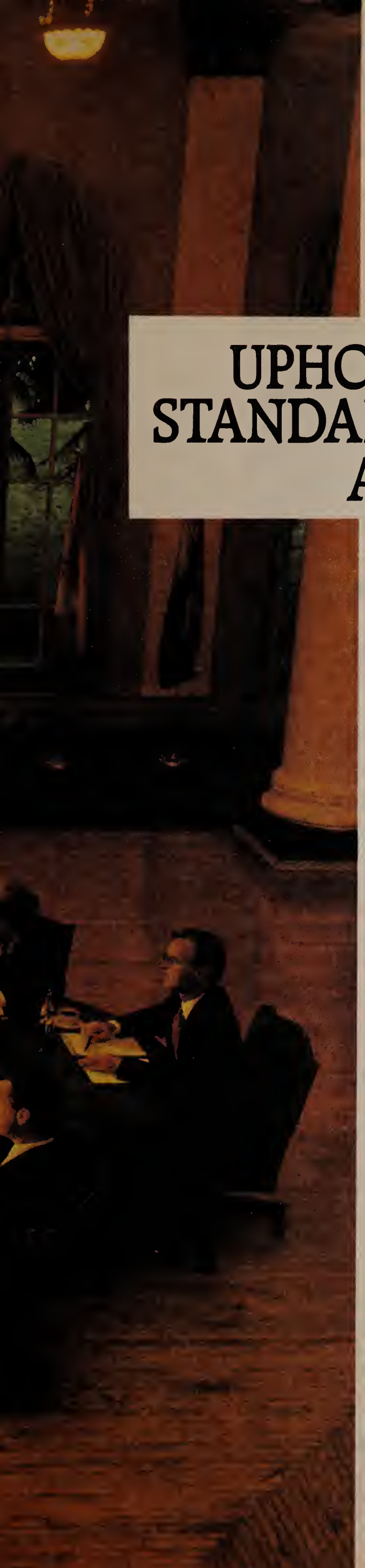

We applaud the efforts of the CCITT as they move toward their goal of creating international standards for computer communications. From their adoption of the present X.25 standard to their recent recognition of the V.42 protocol with LAPM as the international standard for error-control over dial-up telephone lines.

In response to these decisions, Hayes announces that we will be offering our customers a

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The V.42 protocol offers error-free point-to-point modem communications. For those users with existing V-series Smartmodem products and those with modems using MNP, Hayes will provide products compatible with the current installed base.

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INDUSTRY UPDATE

VENDOR STRATEGIES, MARKET TRENDS AND FINANCIALS

Worth Noting

In the first half of 1988, foreign firms paid 20% less to acquire U.S. companies than did U.S. corporations, according to a recent study by American Appraisal Associates, Inc., a valuation firm based in Milwaukee. The reason: Foreign corporations tend to make more "friendly" offers.

People & Positions

Al Eaton was recently named senior vice-president of operations for **U.S. Intelco Networks, Inc.** in Olympia, Wash. Eaton previously served as president of CP National Contech, an unregulated telephone service group in San Francisco.

U.S. Intelco Networks, which is owned by independent telephone companies, provides calling card and other specialized information services to over 600 independent telephone companies.

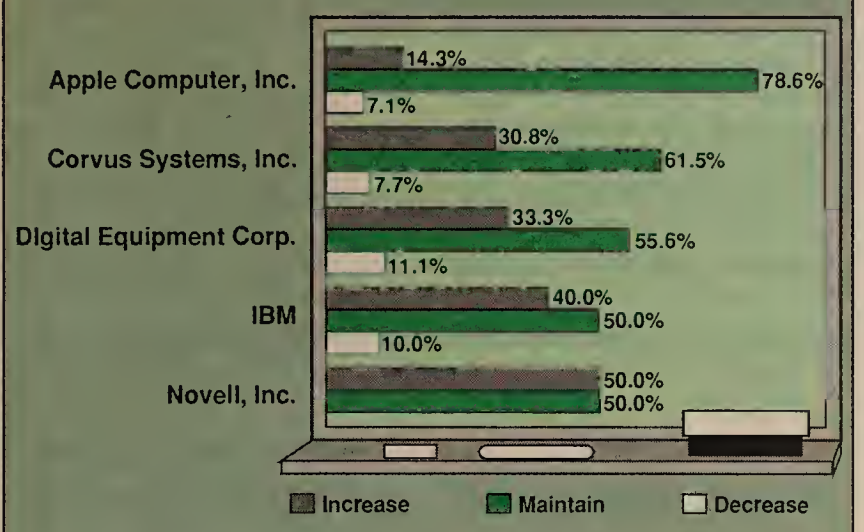
Stuart Brauer recently joined **McDonnell Douglas Information Systems Co.** as vice-president of business development. Most recently, Brauer served as vice-president, U.S. sales for Wang Information Services Corp., a subsidiary of Wang Laboratories, Inc. that provides voice and network services and products that work with other Wang products.

Orion Network Systems, Inc. last week announced the appointment of **Graham Burke** as chief financial officer. Burke was vice-president of finance for Saab Aircraft of America, Inc. and has also held key financial positions with Boeing of Canada, Ltd.

Orion, based in Rockville, Md., provides global interconnection services for switched-carrier traffic and private-line networks for corporate communications.

LAN spending trends

Educational institutions' projected expenditures for local networks in 1988 (percentage of change compared to 1987).



Figures are based on a survey of 346 educational institutions.

GRAPHIC BY SUSAN SLATER SOURCE: THE SIERRA GROUP, TEMPE, ARIZ.

ACC-Wollongong merger a boon to both companies

Benefits stem from complementary technologies.

By Rex Bowman
West Coast Correspondent

SANTA BARBARA, Calif. — Industry analysts are praising the proposed marriage of The Wollongong Group, Inc. and Advanced Computer Communications (ACC) as a good move for both companies.

The companies revealed three weeks ago that they had signed a letter of intent for ACC to merge with Wollongong. According to the terms of the agreement, the companies will operate separately under an as yet unnamed holding company.

The new entity will allow both organizations to operate as individual profit centers, with ACC maintaining its core business as a provider of bridges, routers, front-end processors and gateways for IBM, Digital Equipment Corp. and AT&T computers.

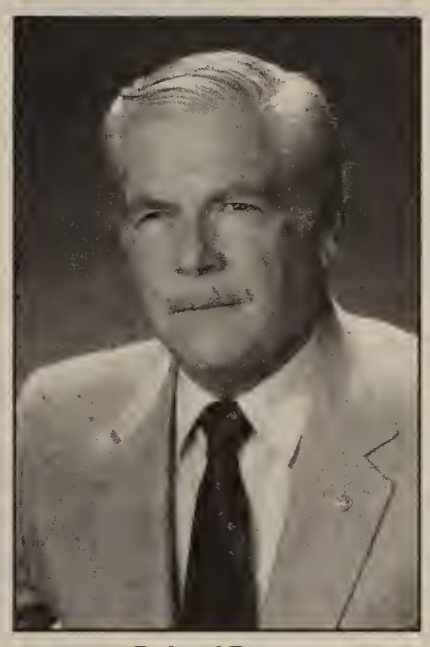
Likewise, Wollongong will continue as a supplier of Transmission Control Protocol/Internet Protocol software. TCP/IP's data transmission standard has gained popularity as a means for multivendor connectivity.

Stockholders from both private companies will meet before the end of December to vote on the proposed deal.

"The merger makes eminently good sense," said Alice Bradie, senior technology analyst in the New York office of Hambrecht & Quist, Inc., an investment bank.

"I normally use the term complementary advisedly," she said. "But these particular companies are very complementary. There's a lot of cross-fertilization between the two."

ACC and Wollongong have been using each other's technology for the past five years. For instance, many of ACC's bridges



Roland Bryan

and gateways to IBM and DEC equipment use Wollongong's TCP/IP software, and Wollongong has bundled ACC's hardware on an OEM basis with its products in certain instances.

"We're in the same business, and our staffs and products are compatible," said Roland Bryan, president of ACC.

Both companies are roughly the same size: ACC expects revenue of about $17 million in 1988, while Wollongong predicts sales of about $21 million in its current fiscal year.

Bryan will become the holding company's chairman and chief technical officer, while Wollongong President Herbert Martin will become its president and chief executive officer.

Both companies will continue to develop their current product lines, but it has not yet been determined what logos the products will carry, Bryan said. "A lot of the details haven't been fleshed out yet, but we expect to take a good share of the networking market."

Providers of ANI face privacy hurdle

Opponents such as ACLU, users with unlisted numbers see feature as an invasion of privacy.

By Bob Brown
Senior Writer

The emergence of automatic number identification (ANI) services promises users time and cost savings, but concerns about invasion of privacy present a major obstacle for carriers hoping to bring ANI services to market.

With ANI, the party receiving a phone call can monitor the calling party's telephone number. The information is sent over the public network via an out-of-band channel separate from the one over which the call is transmitted.

ANI is an advanced feature that will support a number of innovative network applications, particularly in telemarketing. For example, using ANI, an incoming call along with information about the caller could be routed to a sales agent.

But opponents of ANI say the service infringes on their right to privacy.

Opponents, such as the American Civil Liberties Union, are concerned that vendors will collect telephone numbers that can be used, for example, to develop mailing lists. Callers who have unlisted phone numbers are worried that such a precaution will be a waste of money. There is also a concern that ANI would deter people from calling certain hotlines for fear of being identified.

New Jersey Bell Telephone Co. recently faced opposition from the New Jersey Department of the Public Advocate in trying to get approval from the state Board of Public Utilities for its ANI offering.

"I think there is going to be a battle on all legal levels — at the FCC, local [Public Utility Commissions] and, somewhere along the line, in Congress," said Bruce Kushnick, president of National TeleVoice, a voice communications consulting and design firm based in New York that released a report on ANI earlier this year. "There are a lot of problems having to do with the Big Brother syndrome."

As might be expected, a National TeleVoice survey of 50 residential users found that 58% of them would like to receive callers' telephone numbers, but 82% would not want their number

(continued on page 12)

INDUSTRY BRIEFS

Cincinnati Bell, Inc. last week signed an agreement in principle to purchase **NICE Corp.** of Ogden, Utah, for $27.3 million. The privately held NICE, formed in 1976, provides telemarketing services using 800-line toll-free calling. The lines are used to gauge consumer response to advertising media, to support customer service functions for clients and to fill customer orders for clients. Cincinnati Bell offers basic telephone service in the Cincinnati metropolitan area, as well as network and equipment services. It also operates a business-to-business telemarketing firm called Telephone Marketing Services. NICE will retain its current management team after the acquisition.

AT&T Microelectronics Japan announced the opening of an office in Tokyo to support marketing of AT&T's advanced components to OEMs in Japan. This represents the first time an AT&T Bell Laboratories product design organization will be located in a foreign country. The office will offer Japanese OEMs customized design capabilities for application-specific integrated circuits and for other advanced components. David Hytha will serve as managing director. AT&T Microelectronics sells components and electronic systems to OEMs including linear and digital communications integrated circuits, and lightwave subsystem components such as optical data links and digital signal processors.

AWA-Nortel Pty. Ltd., jointly owned by **Northern Telecom, Inc.** and **AWA Ltd.**, has been awarded an $18.4 million contract to supply Telecom Australia with a DPN-100 high-speed, data packet-switching network. The equipment will be

(continued on page 12)

Covidea ends endeavor in commercial videotex mart

AT&T/Chemical Bank venture never got moving.

By Bob Brown
Senior Writer

JERICHO, N.Y. — Covidea, the joint venture created by AT&T and Chemical Bank in 1985, recently announced that it is bailing out of the commercial videotex market as a result of low market demand.

By folding its videotex operations, Covidea is terminating services for home banking, stock market quotes and discount brokerage operations. The company has offered those services since 1985. Covidea will also no longer offer videotex services such as restaurant and movie reviews.

Covidea's Pronto service for individual home banking will be discontinued effective Jan. 31, while Business Banker, a home-banking service for small businesses, will cease Feb. 28. The videotex services will be phased out by the end of February as well, Covidea said.

Slow market growth

Stewart Sims, chief executive officer of Covidea, said the venture's videotex operations are being discontinued "because the market for videotex services has not grown as rapidly as was originally projected." Other players have dropped out of the U.S market for similar reasons, he said.

Gary Arlen, president of Arlen Communications, Inc., a Washington, D.C. research firm, said Covidea's decision to scrap the services may be part of a broader AT&T cost-cutting plan. AT&T, which is expected to report a net loss for the year, must avoid as many losses as possible, he said.

AT&T and Chemical Bank said they will continue to work together through the Covidea partnership "to explore ways to give consumers more control and flexibility in accessing information and managing their finances." The partnership will not have any commercial products once it disposes of the videotex services. However, it may again offer products in the future, a spokesman said.

Limited demand

At about the same time Covidea sprang up, major New York banks began offering home-banking services in hopes of decreasing the need for service at branch locations.

However, the availability of new services, such as Chemical Bank's automated telephone access system, which provides account balance and rate information on a 24-hour basis, and the broader availability of automated teller machine networks have limited the market for home-banking, Sims said.

Covidea officials would not disclose how many subscribers will be affected when the venture ceases operation. Industry sources estimate that Covidea has sunk $100 million into marketing and developing the services.

Chemical Bank will offer Covidea's small business customers access to its ChemLink family of electronic banking products, which offer corporate cash management services, as a replacement service.

> Arlen said Covidea's decision may be part of a broader AT&T cost-cutting program.
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Home-banking services "look more valuable to the institutions than to consumers," Arlen said.

Covidea's woes may be good news for other providers of home-banking services. A spokesman for Chase Manhattan Corp. acknowledged that his company might pick up a few cast-off customers from Covidea.

The spokesman said Chase Manhattan's services have not grown as fast as the bank expected them to.

However, the institution's home-banking and discount brokerage services have been well received, and the bank plans to continue offering them, he said.

Providers of ANI face hurdle

continued from page 11

automatically displayed to the called party.

Raymond Makul, director of the Division of Rate Counsel of the New Jersey Department of the Public Advocate, argued against the approval of New Jersey Bell's ANI service on behalf of more than 60 of the Bell operating company's customers who wrote to Makul's office. Several customers said they were afraid callers would be identified when calling crime tip lines, birth control centers or tax agencies, Makul said.

John Kauza, AT&T's Integrated Services Digital Network product manager, said people who call into businesses willingly give up most of the information anyway.

"There is a big misconception about what information is known" from using ANI, Kauza said. It will be important for vendors to explain to the public what ANI really is, he added.

All the phone company delivers to the receiving party is the phone number — the rest of the information about a caller is stored in a data base to which the caller may already have contributed, he said. The caller might have contributed a social security number, credit card number or home address to the firm in an earlier transaction, Kauza said.

"Every innovation has a side effect, from hair spray to insecticides," Kauza said. "This is an issue that will come up and be discussed. It will be resolved in terms of the common good far outweighing anything that might be of a private nature."

According to Kushnick's research, business users stand to save from 10% to 30% on their overall marketing costs by using ANI services. Users can cut down the need for human operators, reduce the length of calls and develop data bases that can be used by other parts of the company or sold to another company, he said.

> "Every innovation has a side effect, from hair spray to insecticides," said AT&T's Kauza.
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Current users of AT&T's ANI services, such as INformation FOrwarding 1 (INFO-1) and INFO-2, said ANI is helping them cut the average time per call and letting them handle many more calls ("AT&T releases plans for wider availability of PRI," *NW*, Dec. 5). INFO-2 is offered as an extra service with AT&T's Megacom 800 Service, an 800 number calling service.

For this AT&T ANI service to work, the calling party's call must pass through a Class 5 equal access central office to the receiving party's site via an AT&T 4E central office switch that supports ISDN. The user has to have a Primary Rate Interface-equipped private branch exchange.

AT&T has 140 users lined up for ANI services, Kauza said.

Unlike AT&T, New Jersey Bell targets its ANI service at residential users, but it hopes business users will buy the service as well. New Jersey Bell won permission in October from the New Jersey Board of Public Utilities to offer a series of Class services that includes ANI. The BOC has started rolling out the services throughout parts of the state this month.

New Jersey Bell expects 80% of its customers to be able to subscribe to ANI by the end of 1989 and figures that it will be available statewide during the first half of 1991.

To receive ANI, business users pay a onetime fee of about $60 for an on-site device that shows the calling number (available from only a couple of vendors, including Bell Atlantic Business Supplies) and a monthly charge of $8.50 per line. Residential users are subject to the same charge for a box, but they pay a $6.50 monthly charge per line.

Computer Consoles goes for STC acquisition bid

By Bob Brown
Senior Writer

WALTHAM, Mass. — Computer Consoles, Inc., which has been shopping for a buyer for months, recently agreed to be acquired by STC PLC of London for $168.4 million in cash.

STC subsequently made a cash tender for all outstanding shares of Computer Consoles.

Computer Consoles, a maker of superminicomputers and turnkey directory assistance data base systems for telephone companies, is a major supplier to STC. STC makes computers and communications products, including transmission products used for telephone sets, multiplexers and undersea cables.

As a show of support for the acquisition, Computer Consoles' board members and executive officers granted STC an option to buy all of their shares, which constitute about 12% of the company's total shares. They also said they would vote in favor of the acquisition. John Cunningham, Computer Consoles' chairman and chief executive officer, was among the executives who pledged support for the merger.

In one day's heavy trading on the American Stock Exchange, news of the agreement pushed the price of Computer Consoles' stock up $4.25 per share to $12.25 per share, just under STC's offered price of $12.80 per share.

Because Computer Consoles is a major supplier of communications products to STC, it makes sense that STC would want to buy the firm, said Karen Payne, a technology analyst at Butcher and Singer, Inc., a brokerage firm in Philadelphia.

STC and its International Computers Ltd. division account for about 40% of Computer Consoles' product sales, according to a Computer Consoles spokesman. STC distributes Computer Consoles data base systems to British Telecommunications plc, and International Computers has an OEM agreement to distribute the firm's superminicomputers.

An STC spokesman said the acquisition will be significant because it will broaden STC's customer base in North America.

Computer Consoles offers STC expertise in the "integration of intelligence into network products," such as through its directory assistance products, said Michel Guite, a vice-president and telecommunications equipment analyst at the New York brokerage firm Salomon Brothers.

Computer Consoles reported net income of $11.3 million on revenue of $148.4 million for 1987. STC reported net income of $243 million on revenue of $3.6 billion last year.

Industry Briefs

continued from page 11

used to expand the Australian Packet Switching Network and will provide business users with higher capacity as well as new features and services.

Initial deliveries and installation will begin in 1989 with service scheduled to begin in 1990.

Fujitsu America, Inc. plans to develop an $80 million telecommunications manufacturing and office complex in Richardson, Texas.

The new facility will be used to increase the amount of American-made components — up to 70% — in Fujitsu products. Products to be manufactured at the new facility include cellular mobile and transportable telephones, local and long-distance transmission systems, and digital loop carrier products. When the facility is completed near the turn of the century it could employ as many as 5,000 people.

Worth Noting

"It's becoming increasingly common for [long-distance companies] to waive onetime charges. Every good manager will work to eliminate them."

David Edison
Executive vice-president
Communications Systems Division
Westinghouse Electric Corp.
Pittsburgh

Carrier Watch

Installation of an **NEC America, Inc.** NEAX-61E digital central office switch in its network has enabled **Cincinnati Bell Telephone** to expand telephone service in northern Kentucky.

The new switching system was installed in the independent telephone company's Florence, Ky., central office.

The NEC switches replace analog switches currently used to provide Centrex and local exchange service. The new switches can also handle simultaneous transmission of voice and data.

Cincinnati Bell provides service to 76,000 business customers and 552,000 residential users in southwestern Ohio, northern Kentucky and southeastern Indiana.

NEC develops, manufactures and markets digital key telephone systems, private branch exchanges, facsimile machines, mobile telephones, fiber-optic and digital microwave systems, and central office switches.

Metropolitan Fiber Systems, Inc., a local access service provider, recently said American Long Lines, a regional long-distance service provider, bought capacity on its Philadelphia network.

American Long Lines' net serves cities between New York and Washington, D.C.

Metropolitan Fiber Systems said its customers include US Sprint Communications Co., Williams Telecommunications Group, Inc., Lightnet and RCI Corp.

Users refuse to foot bill for AT&T backup service

Net managers say new feature not worth price.

By Rex Bowman
West Coast Correspondent

BASKING RIDGE, N.J. — While they agree that a new AT&T alternate routing service for T-1 and T-3 links is necessary, network managers do not see why their companies should have to pay for it.

Three weeks ago, AT&T unveiled its Network Protection Capability (NPC), which the carrier plans to offer to its T-1 and T-3 customers. With NPC, AT&T will reestablish service within two seconds after a fiber outage in areas where alternate fiber transmission facilities are available ("AT&T offers new service backup plan," *NW,* Dec. 5).

The feature will be available only for the intercity portion of circuits, and AT&T plans to charge an installation fee and a monthly charge equal to 15% of the monthly fee for the intercity portion of each circuit to be protected. The per-circuit installation fee would be $500 for T-1 customers and $1,000 for T-3 customers.

But numerous telecommunications users interviewed by *Network World* say AT&T, not customers, should foot the bill for protection from disasters such as fiber-optic cable cuts or central office equipment malfunctions. While some of the managers said they are considering signing up for NPC, some dismissed it outright.

"It's a gimmick to get people to pay for what they otherwise are entitled to," said Ken Phillips, director of telecommunications policy for Citicorp in New York.

Phillips said most large companies — which can afford their own backup systems, such as satellite facilities — would not be interested in paying AT&T for backup service.

The Chicago Board of Trade is one case in point. John Mott, director of telecommunications for the board, said it has already protected itself against fiber line cuts and central office disasters by making sure it maintains alternate routes to Illinois Bell Telephone Co. and AT&T.

Mott said NPC would be a nice standard feature, but he questioned why users should have to pay for something that should be part of good service. "I'm totally indifferent to [NPC] because I have backup already," Mott said. "It's too little too late."

AT&T's introduction of NPC

(continued on page 14)

WASHINGTON UPDATE

BY ANITA TAFF

Users getting overcharged. U.S. customers are paying rates for international services that are well above the cost of providing the services, according to a report released by the Federal Communications Commission last week.

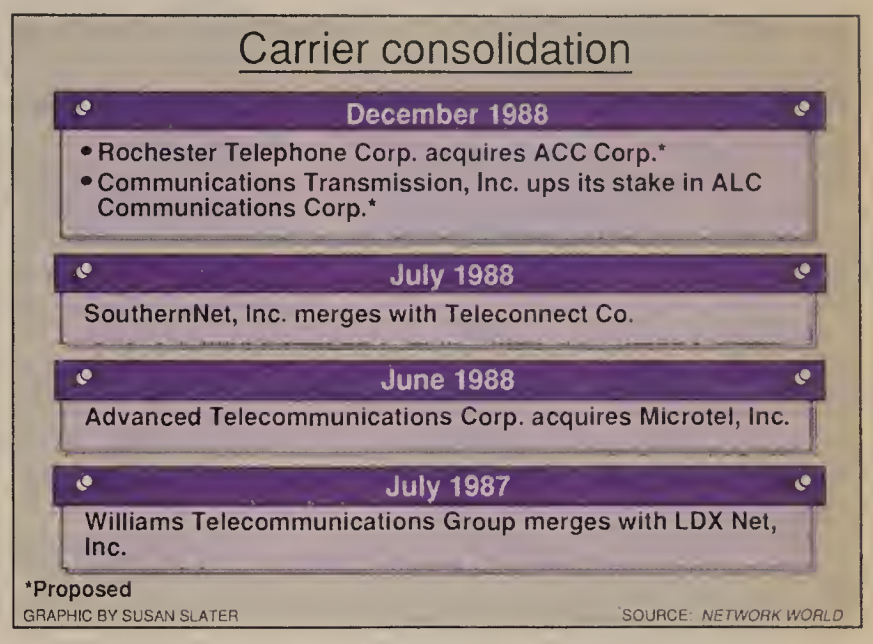
The report concludes that foreign telecommunications administrations have kept rates artificially high by imposing accounting and collection charges for international services. When an international call is placed, the telecommunications providers at both ends receive revenues for the service. FCC Chairman Dennis Patrick said the split between U.S. and foreign providers is heavily skewed, and he estimated that 75 cents of every dollar spent on international services goes to foreign administrations.

Patrick said he was concerned about the net outflow of revenue paid by U.S. customers to other countries and urged foreign service providers to bring their rates in line with costs.

"The primary obstacle to a golden age in international telecommunications could be a continuing effort on the part of foreign telecommunications administrations to treat the U.S. consumer like the goose that laid the golden egg," Patrick said. He said Japanese and West German governments have already taken steps to lower their rates. However, France, Hong Kong and Italy — countries Patrick said charge some of the highest international rates — have not followed suit.

USDA picks Telenet for new network. Telenet Communications Corp., based in Reston, Va., announced last week it will provide the U.S. Department of Agriculture's

(continued on page 14)



Telcos join forces as industry changes

Lower prices will result as carriers struggle to differentiate their services from rivals' offerings.

By Bob Wallace
Senior Editor

ROCHESTER, N.Y. — Frenzied competition, network modernization and plunging service prices continue to force consolidation in the telephone industry, a phenomenon evidenced in five new developments within the last two weeks.

Rochester Telephone Corp., a regional service provider based here, recently announced plans to acquire ACC Corp., a company with a long-haul affiliate, for roughly $20.5 million.

In a separate development, Communications Transmission, Inc. (CTI), a regional long-distance carrier, recently said it will up its stake in ALC Communications Corp., a national long-distance service provider, to 55.6%.

Yet another regional carrier, Lightnet, said it has signed a series of new traffic-swapping agreements that will enable it to provide fiber-based digital services to 15 additional cities.

Many other regional carriers will be teaming up in the coming months to take on AT&T, MCI Communications Corp. and US Sprint Communications Co., according to analysts who track the service industry.

The ensuing scramble for new business will mean lower service prices as well as new and more feature-rich services as carriers struggle to differentiate their offerings from rivals' services, industry watchers contend.

But what's good news for users may be bad news for some regional carriers, the analysts stressed. Heightened competition will mean slimmer profit margins. And slim profit margins will force some regional carriers from the market.

"There is no doubt that there will be further [industry] consolidation," said Robert Self, president and founder of Market Dynamics, a New York-based telecommunications research group.

"The biggest question on the minds of small carriers is: 'Do I sell out to a [larger carrier] now, or do I sell out a year from now?' " Self said.

Competitive pressures from larger carriers force smaller ones to expand their customer base and networks through mergers, acquisitions and joint projects, Self said.

Such is the case with Rochester Telephone and ACC. Upon completion of the transaction,

"There is no doubt that there will be further consolidation," Market Dynamics' Self said.

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ACC will become Rochester Telephone's ninth affiliated entity, the spokesman said.

Rochester Telephone's principal operating territory is a six-county area in western New York. The carrier operates 11 other telephone companies in New York, Pennsylvania, Michigan and Indiana, providing 550,000 access lines.

ACC's long-haul service unit, ACC Long Distance Corp., operates one of the largest independent regional long-distance networks in the Northeast, serving 22,000 business and residential customers in New York, Massachusetts and Connecticut, a Rochester Telephone spokesman said.

(continued on page 14)

Telcos join forces as industry changes

continued from page 13

The parent company, ACC, also owns a private-line network company.

Although their sales territories overlap, both companies will gain much from the merger. "They have different installed bases, different sales forces and different operations," Self explained. "[Rochester Telephone] sells to large corporations, while ACC sells to small and midsize users."

Self said the Rochester Telephone/ACC merger is a positive move for each firm. "Both companies are well respected in the industry and have a very loyal following of customers. Both will realize increased revenue from swapping network traffic."

CTI, an Austin, Texas-based regional carrier, had diversification in mind when it bought 833,333 shares of ALC stock for $12.5 million about a week ago, Self said.

CTI owns and operates an all-digital network serving 51 major metropolitan areas in 22 states. ALC Communications operates a 52,000-route-mile nationwide network that it claims will be all-digital by late 1989.

Lightnet's traffic-swapping deals

Industry consolidation has also affected Lightnet, which currently operates a 5,000-mile, all-fiber network serving users in 38 major metropolitan areas east of the Mississippi River.

Rather than taking on the time-consuming and expensive task of building network extensions to West Coast cities, Lightnet has opted to expand its network by hammering out traffic-swapping agreements with key carriers.

A source close to Lightnet who requested anonymity said the carrier has finalized traffic-swapping agreements with other regional carriers but would not name them.

Earlier this year, Lightnet and Williams Telecommunications Group (WillTel), sealed a traffic-swapping deal that called for the two to interconnect facilities in Chicago and New Orleans. WillTel owns and operates a 5,000-mile fiber and digital microwave network serving about 40 cities west of the Mississippi River.

Washington Update

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marketing service with a network that integrates packet switching, electronic messaging and broadcast satellite technologies.

The network, which is scheduled to begin operation by the end of the year, will transmit commodity reports to 130 offices nationwide.

More than 900 reports on the prices, availability and quality of fruits, vegetables, dairy products and livestock will be broadcast each day. Reports will be prepared using Telenet's PC Telemail software, then sent over Telenet's X.25 packet-switching network to a satellite earth station. The data will then be broadcast across the country to very small aperture terminal receivers. Contel ASC will provide satellite services.

Telenet will also be providing services to the government through the Federal Telecommunications System (FTS) 2000 network. Telenet's parent corporation, US Sprint Communications Co., was named a winning bidder on the contract earlier this month.

Last week, Telenet revealed it will receive 10% to 15% of the revenue from the US Sprint contract, which is valued by US Sprint at $3.5 billion to $5 billion over 10 years.

Carriers want lower rates. Bell Atlantic Corp. and New York Telephone Co. filed tariff reductions with the Federal Communications Commission last week to prevent them from exceeding their 12% authorized rate of return. Bell Atlantic asked to lower its rates for switched-access services by $26 million. With the reduction, Bell Atlantic expects to make about $949 million from switched access during 1989. New York Telephone asked the FCC for permission to lower its rates by $2.6 million.

NTI testing CCS7 to prepare for Army's S. Korean net upgrade

New capabilities are being tested in Meridian SL-100 net.

By Bob Brown
Senior Writer

DAYTON, Ohio — Northern Telecom, Inc. said recently it is nearing completion of the first-ever test of Common Channel Signaling System 7 (CCS7) capabilities in a network of Meridian SL-100 private branch exchanges.

In the test, two Meridian SL-100s at Wright-Patterson Air Force Base here are exchanging signaling data via CCS7. The test is being conducted in preparation for an upgrade of the U.S. Army's South Korean telephone network, which uses 29 Meridian SL-100 switches. Nine of those PBXs will be upgraded with CCS7 capabilities as part of the Korean Telephone Upgrade program.

The upgrade is expected to provide the Army with Integrated Services Digital Network capabilities and to result in faster call setup and more efficient use of bandwidth, Northern Telecom said.

Precedence and preemption

Northern Telecom is testing software and CCS7-compatible trunks specifically designed for military applications. These trunks and software support what is known as multilevel "precedence and preemption" capabilities.

The precedence and preemption capabilities give authorized callers who cannot make a connection the ability to preempt another ongoing call of lesser importance, said John King, Northern Telecom's director of product line management for corporate networks. This feature would be used in the case of an emergency, when a call of higher precedence supersedes a lower precedence call, he said.

The two Meridian SL-100 systems being tested carry about 5,000 calls per day using the CCS7 trunks.

CCS7 is an industry-standard system for transferring signaling and call-processing information between switching systems equipped with special data bases. It is the platform on which many ISDN offerings, such as automatic number identification, are based.

In the Northern Telecom test, four T-1 lines are used to link the two PBXs. The T-1 lines support three out-of-band signaling channels supporting 93 Autovon ISDN User Part trunks. This type of trunk was specifically developed for military applications that support the multilevel precedence and preemption capabilities required by the Autovon network, a subnet of the Defense Switched Network (DSN) that connects major switches in the DSN.

The SL-100s are also being tested as tandem switches, which can serve as centralized attendants for a group of up to nine switches, said Ken Heffner, director of product line management for the Networks Division of Northern Telecom.

Through a cooperative arrangement with the U.S. Air Force, testing of Northern Telecom's custom-developed communications software featuring CCS7 capabilities began at Wright-Patterson in mid-1987. The testing was called for in a contract with the U.S. Army.

The Army contract was worth $17 million when it was signed in 1984. The contract has since been amended and is now worth more than $30 million, a Northern Telecom spokesman said.

Testing CCS7 at the Air Force base rather than in South Korea enabled Northern Telecom to use its support staff and facilities, King said. He has been responsible for managing the development, testing and deployment of the CCS7 technology.

CCS7 capabilities are scheduled to be implemented in the Army's South Korean network during the first quarter of 1989, King said. The South Korean net supports both voice and data communications.

The network is used for communications among U.S. Army bases in South Korea and is linked to the South Korean Army's network as well.

The upgrade provides for compatibility with the DSN, which links all military bases and government agencies worldwide, King said.

"We're showing that the SL-100 has the capability to support SS7 and enhancement capabilities unique to the government environment," King said.

Northern Telecom said it is working with another customer, Eastman Kodak Co., to implement ISDN Primary Rate Interface and CCS7 capabilities as well. Several other contracts have been signed by customers seeking CCS7 applications, but Northern Telecom said it will not reveal information about these contracts.

Northern Telecom said it currently offers CCS7 capabilities with its other central offices.

Users refuse to foot bill for AT&T service

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came less than a month after a construction crew severed AT&T's main Eastern Seaboard fiber route on Nov. 18. That cut crippled customer networks along the East Coast.

The resulting outage, along with the Hinsdale, Ill., central office fire in February and other fiber cable cuts, has spurred user concerns about disaster recovery.

Despite their concerns, users are not convinced that paying AT&T for alternate routing is the answer.

One customer, Midlantic Banks, Inc., which was affected by the Nov. 18 fiber cut, is shopping around for other T-1 providers, according to Frank Ferrara, assistant vice-president and manager of communications services for Midlantic.

"We are considering the AT&T feature, but just prior to the fiber failure we began to consider alternate T-1 vendors," Ferrara said. "Several of those vendors automatically supply that kind of redundancy as part of their offerings. There's already a lot of duplication built into US Sprint's network."

Another telecommunications manager, based in San Francisco, expressed the hope that pressure from competitors would eventually force AT&T to offer NPC as a basic feature of its T-1 and T-3 service.

"T-1 is a very competitive area right now, and AT&T could better serve its own interests by offering [NPC] for free," said the manager, who asked not to be named. "I think it would make a nice bonus feature for companies that choose AT&T to handle their T-1."

DATA COMMUNICATIONS

PRODUCTS, SERVICES, ARCHITECTURES, STANDARDS AND NETWORK MANAGEMENT

Worth Noting

"Worldwide corporate spending on data encryption equipment will grow from $926 million this year to $1.2 billion in 1992, according to a new study. Growing concern over security threats to vital data plus falling equipment prices are spurring the growth."

From "Data, Text & Voice Encryption Worldwide Markets"
International Resource Development, Inc.
New Canaan, Conn.

Data Packets

Data Race, Inc. recently added a networking capability to its software that allows a personal computer equipped with the company's MasterModem to act as a facsimile server for any MS-DOS-based workstation.

The MasterModem PC-Race Fax Version 1.15 software, which will be provided free to registered users, lets a single workstation on a local net act as a facsimile server for the network.

This allows all users to originate, send, view or print incoming Group III facsimile messages.

PC-Race Fax runs on IBM Personal Computers, XTs, ATs, Personal System/2s and compatibles and requires 640K bytes of random-access memory.

The software supports the facsimile capability built into external and internal versions of the Data Race MasterModem.

MasterModem PC-Race Fax software costs $295. The Data Race MasterModem ranges in price from $795 to $1,395, depending on the model.

Data Race is located at 12758 Cimarron Path, Suite 108, San Antonio, Texas 78249, or call (512) 692-3909.

Two firms unite to offer U.S.-to-UK SDLC packet net

Service touted as alternative to leased lines.

By Paul Desmond
Staff Writer

RESTON, Va. — Telenet Communications Corp. and British Telecom International, Inc. last week announced a packet-switched network alternative to international leased lines used to support IBM's Synchronous Data Link Control protocol.

Telenet's Global Multidrop Service, which British Telecom International will market under the name International MultiStream Synchronous Service, will enable users to send SDLC traffic between sites in the U.S. and the UK via packet networks operated by the two carriers.

The service, an extension of similar services offered by both companies in their respective territories, will not carry a time-sensitive fee, which is usually associated with packet networks.

Telenet has offered its Multidrop Plus Service since May for users transmitting SDLC or IBM Binary Synchronous Communications traffic within the U.S.

British Telecom International has offered a similar package, MultiStream Synchronous Services, for the past year on its public data network, a company spokeswoman said.

Telenet uses "multidrop" in the name of its service because the offering is expected to replace multidrop services from other long-distance carriers, according to Darrell Tanno, manager of data service development for Telenet's international services. The Telenet domestic service offers users the same flat rate associated with leased multidrop lines.

Users can link remote sites dispersed throughout the country to a single multidrop line, Tanno said.

Customers are charged a rate that varies only according to the number of drops, not according to usage or distance.

Global Multidrop Service also eliminates geographic restraints for international applications. However, the service is not offered at a flat rate.

For each remote terminal in the UK, users are charged a British Telecom International connection fee of about $1,425 per

(continued on page 16)

BELLCORE scheme speeds digital data on public net

By John Cox
Senior Editor

LIVINGSTON, N.J. — Bell Communications Research, Inc. said recently it has completed testing experimental transmission and switching technology that may allow telephone companies to offer very high-speed digital data services over public packet-switched networks.

The research arm of the regional Bell holding companies tested customer access interfaces to a backbone data net composed of advanced packet switches and fiber-optic facilities ("BELLCORE develops new packet switch," *NW,* Dec. 12).

BELLCORE officials said the tests demonstrated the feasibility of next-generation data services such as the proposed Switched Multimegabit Data Service (SMDS).

SMDS would give users a way to link local networks at different sites without building a private data network. The service would be offered as part of a metropolitan-area network, for which BELLCORE is developing standards and product specifications. SMDS would be faster than existing wide-area options, such as leased lines, and less expensive than private-line facilities, according to BELLCORE.

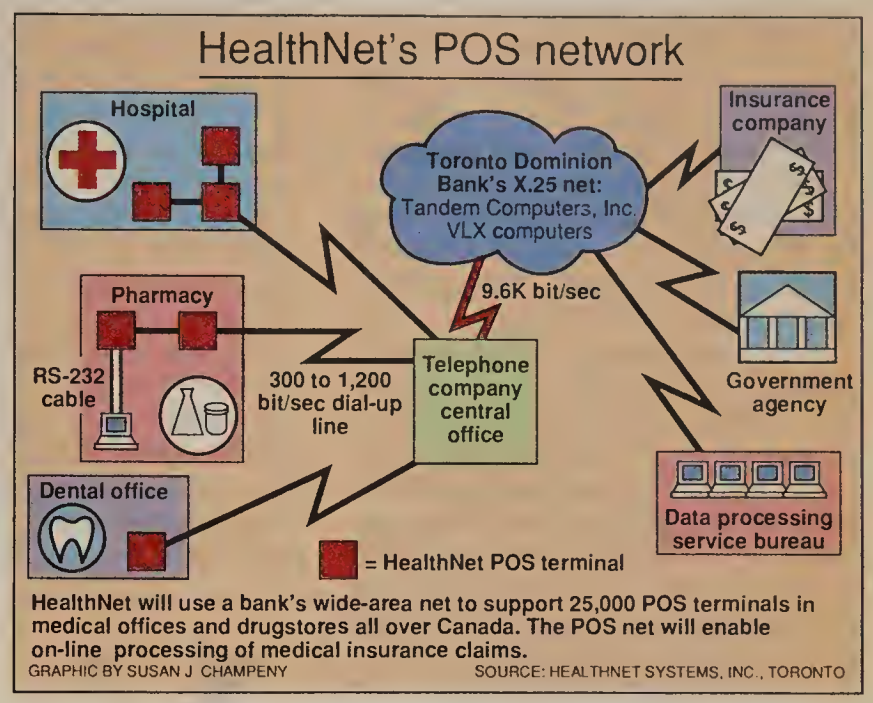
In an SMDS net, individual computers or local net gateways would be linked to the nearest telephone company central office via a dedicated interface running at 45M bit/sec. At the central office, high-speed packet switches would route data packets to their destinations.

Sites interconnected by SMDS would be able to share files and applications as if they were connected in a high-speed local net, according to BELLCORE officials.

SMDS employs a connectionless switching method that greatly reduces the processing overhead associated with routing data packets, according to George Dobrowski, BELLCORE's district manager of advanced data systems technology. One advantage of this scheme over connection-oriented methods is higher throughput, he said.

The connectionless method is the same used in local networks, enabling SMDS to function, in effect, as a subnet in the customer's

(continued on page 16)



HealthNet will use a bank's wide-area net to support 25,000 POS terminals in medical offices and drugstores all over Canada. The POS net will enable on-line processing of medical insurance claims.

GRAPHIC BY SUSAN J CHAMPENY SOURCE: HEALTHNET SYSTEMS, INC., TORONTO

Group health claims go on-line in Canada

Two firms, province tap POS systems to quicken claim filing, shift industry to 'pay-direct' method.

By John Cox
Senior Editor

TORONTO — A new Canadian network using advanced point-of-sale terminals, an X.25 packet-switched network and the public telephone network will soon provide on-line processing of group health insurance claims.

The HealthNet network, conceived by HealthNet Systems, Inc., based here, will benefit several groups. Consumers will enjoy speedier processing of their claims and will not have to pay up front for medical services and wait for reimbursement from insurers. Pharmacists, doctors and other health care providers will receive payment from insurance companies within days instead of weeks. Insurance firms are expected to procure more business and far less paperwork. And, for the first time, insurers may earn a profit on group health coverage.

HealthNet places powerful POS terminals in drugstores and medical offices nationwide. A built-in dial-up modem links the terminals to a phone company central office. The phone company switches the traffic to an X.25 net maintained by Toronto Dominion Bank. The bank then shuttles each transaction to the insurer's processing system.

A rival, Shared Health Network Services, Ltd., also based here, is taking a similar approach with its POS network. The net will start up early next year, according to Richard Clitherow, vice-president at Shared Health. But the province of Saskatchewan may beat both firms to the punch, he said. There, the government is expected to launch a province-wide POS net for its public medical insurance program before the start of the new year.

In each case, these on-line nets will dramatically streamline the process of filing an insurance claim. Currently, the claim process, starting when a pharmacist fills a customer's prescription and ending when the pharmacist or customer receives payment from the insurer, can take over a month.

By contrast, HealthNet will, in most cases, give pharmacists information on the customer's insurance coverage within 20 seconds. HealthNet will compress the entire claim process to a few days and eventually to 24 hours,

> In each case, on-line nets will dramatically streamline the process of filing a claim.
>
> ▲▲▲

said Ian Cumming, president of HealthNet.

In addition, by delivering an on-line processing capability, HealthNet will help shift the Canadian insurance industry from a reimbursement system to what Canadians call "pay-direct." Under the reimbursement arrangement, Canadians — who have already paid for their insurance coverage — pay up front for medical services and prescriptions and then seek reimbursement. With pay-direct, insurees pay nothing, simply presenting a card that identifies them as participants in a group plan. The health providers file the claims

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Group health claims go on-line in Canada

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and receive payment from the insurer.

Some pharmacists already have opted for a pay-direct system that uses a magnetic card, a card reader and a personal computer to process the claim for customers.

But typically, such services are off-line, Cumming said. As a result, the pharmacist has limited or no access to up-to-date claim information, which can help reduce the 10% of claims that go unpaid.

HealthNet was originally funded by Directcard Identification Systems, Ltd. (operating as RX Plus), a company that processes group medical claims and benefits for 20 of Canada's 33 insurance companies. But it will function as an independent network utility, available not only to RX Plus but to competing benefits administrators, individual insurance companies and government agencies administering the nation's federal health care program.

"HealthNet is a transaction railroad, and anyone can ride on it," Cumming said.

But HealthNet could not afford to lay down its own tracks. Instead, HealthNet executives hammered out a deal with Toronto Dominion Bank to use the bank's existing X.25 packet-switching network as HealthNet's backbone.

"HealthNet decided that if they had to use a network, the best ones in Canada were run by the banks," Cumming said.

The bank's own network requirements — high availability, stringent security controls and coast-to-coast communications experience with POS terminals and automated teller machines — were exactly what HealthNet required.

To access the bank's X.25 network, insurers and public health agencies that administer government medical insurance programs will rely on leased or dial-up lines to the bank's Tandem Computers, Inc. VLX fault-tolerant computers.

At the POS end, HealthNet plans to distribute 25,000 POS terminals from Integra Systems, Inc., a Vancouver-based builder of POS devices. The terminal has a built-in RS-485 twisted-pair connection so several devices can be linked together at a POS site. This connection lets the devices talk with one another in turn, much like a local network.

The terminal also has a built-in modem that transmits data at speeds ranging from 300 bit/sec to 1,200 bit/sec. For some POS sites that use an IBM Personal Computer AT with off-line systems, the Integra terminal has an RS-232 port that permits a direct cable attachment from the HealthNet POS terminal to the microcomputer.

Using HealthNet, a druggist slides a magnetic card through the terminal slot and, within seconds, confirms the customer's insurance data and determines if the prescription request is covered by the carrier. The druggist can also check whether any deductibles apply. The druggist can complete the transaction and transmit the claim on behalf of the customer. The customer then has the prescription filled without having to pay. The druggist is assured of payment in a week instead of 30 to 45 days, Cumming said.

The only reason druggists cannot be paid the next day, he said, is that the insurance companies are accustomed to the month-long lag, the so-called "float," between billing and payment. It will take time to convince them to shift to a 24-hour cycle, Cumming said.

Firms unite to offer U.S.-to-UK SDLC net

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month, depending on the currency exchange rate, plus a Telenet service fee of $300 per month. Users also pay about $8.25 per kilosegment (64,000 characters) of data transmitted, Tanno said.

"Compare that to actually running a leased line to the UK for your site, which will run you about $7,000, and you'll see the kind of value that this really offers," he said.

Users access the Telenet or British Telecom International packet networks via a dedicated line. The SDLC traffic is encapsulated in X.25 packets and sent via the public data network so users do not have to buy their own packet assembler/disassemblers.

In addition to cost savings, the service provides features associated with packet networks such as error protection, fault tolerance and dynamic rerouting, Tanno said. In addition, either Telenet or British Telecom International will assume responsibility for managing the network links.

Both companies said they have plans to expand the international service to other countries in North America, Europe and the Far East next year.

Tanno said Telenet is presently negotiating with public data network providers in Japan, Canada and Puerto Rico and hopes to have service to 10 countries by the end of 1989.

British Telecom International is also negotiating with Canada and Japan as well as with some Scandinavian countries, according to a spokeswoman.

BELLCORE scheme speeds digital data

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networking scheme, Dobrowski said.

"One of the strengths of the SMDS service description is [that] it's technology-independent," Dobrowski said.

BELLCORE is preparing equipment specifications for a subscriber interface to link existing customer equipment to an SMDS service. The interface would comprise a computer circuit board and software.

BELLCORE will supply the RBHCs with full specifications for all SMDS components. The RBHCs will then be able to contract for equipment development with telecommunications and computer equipment manufacturers, Dobrowski said. He estimated that SMDS services would be available in two to four years.

New Unix version to incite user and vendor acceptance of OSI

By Paul Desmond
Staff Writer

BERKELEY, Calif. — A new version of Berkeley Unix that supports the full seven-layer Open Systems Interconnection model is expected to spur wider user and vendor acceptance of OSI, according to developers and analysts.

Berkeley Unix 4.4 Berkeley Software Distribution (BSD), under development at the University of California campus here since June, is tentatively scheduled to be beta-tested next spring and generally released by the end of next year.

The development project is funded by the Defense Department's Advanced Research Projects Agency and the Defense Communications Agency ("Posix project designed to spawn OSI-based products," *NW*, July 11).

In addition to support for Transmission Control Protocol/Internet Protocol, which already exists in Berkeley Unix, Berkely Unix 4.4 BSD will incorporate OSI-compatible software developed by other universities, the government and private companies.

Analysts and sources close to the project agreed that incorporating OSI in Berkeley Unix will spur development of OSI-compatible products from vendors and give users a chance to experiment with OSI protocols.

The new Unix version will also be compatible with Posix, the IEEE-proposed standard that defines a common interface for operating systems.

The National Institute of Standards and Technology (NIST) required support for Posix in a recent Federal Information Processing Standard, which federal agencies adhere to when designing bid specifications for computer systems.

One source close to the OSI-Posix Project, Keith Sklower, a member of the technical staff for Berkeley's Computer Systems Research Group, said the new Berkeley Unix version will do for OSI what previous versions did for TCP/IP.

"The hope is that incorporating an openly available version of the OSI protocols in Berkeley Unix will foster their acceptance in the commercial community and give them widespread use in the same way that the incorporation of the TCP/IP protocols in Berkeley Unix contributed to the success and commonality of that protocol suite," Sklower said.

"It's going to make [OSI] much more available and promote it to a large extent," said Marshall Rose, principal software engineer for Palo Alto, Calif.-based The Wollongong Group, Inc., which has been working with Berkeley on the project. "This will really be a tremendous shot in the arm for OSI worldwide."

At the same time, the new version should aid vendors in developing OSI-compatible products by giving them a reference implementation, Rose said.

Daniel Lynch, president of Advanced Computing Environments, an educational firm based in Mountain View, Calif., said Berkeley Unix 4.4 BSD will also give users a chance to experiment with OSI protocols. "This capability gives people . . . who run Berkeley Unix or its variants a chance to run OSI in addition to the TCP/IP protocols."

Steve Trus, an NIST computer scientist and manager of the OSI-Posix Project, agreed with Lynch, noting that some OSI products, such as for file transfer and electronic mail, are available now. "The products are available. We have to get people using them," he said. "Our goal is to assist in the transition from TCP/IP to OSI."

Initial importance downplayed

Sklower downplayed the initial importance of the new version for users in terms of increased functionality over TCP/IP. "It may not be all that terribly useful at the moment," he said. "It isn't clear to me that the OSI suite of protocols offers any new functionality that doesn't already exist with TCP/IP."

He said both TCP/IP and OSI offer directory services as well as virtual terminal, file transfer and E-mail capabilities supporting networking among disparate devices. "What [TCP/IP] doesn't offer is political palatability to the rest of the world," he said.

He agreed with Rose that Berkeley Unix 4.4 BSD would be useful to vendors. "They may incorporate it into their own products directly, and that will save them development costs," Sklower said.

Lynch painted a brighter picture, saying that OSI allows for more functional applications compared with TCP/IP. For example, OSI's X.400 E-mail supports graphics, whereas the TCP/IP version does not.

Spring beta test?

Berkeley hopes to have prerelease versions of the OSI-equipped Unix out to about 10 beta-test sites next spring, Sklower said. General release is expected by December. He stressed that these dates were estimates, not commitments.

Berkeley is receiving help from various sources for the OSI-Posix Project. One main source is the International Standards Organization Development Environment (ISODE), which Rose said was started in 1986 to provide an openly available collection of OSI applications. ISODE applications include File Transfer, Access and Management, Virtual Terminal Protocol, an OSI directory and numerous program development tools for OSI application writers.

Since 1986, Rose has been charged with overseeing ISODE, and, as such, all ISODE contributors must send their code to him for quality assurance and interoperability testing.

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Worth Noting

"As far as OSI applications go, right now there are only two available — E-mail messaging and file transfer."

Douglas McLean
Network service manager
Apple Computer, Inc.
Cupertino, Calif.

Netnotes

Cabletron Systems, Inc. has introduced an Extended Media Adapter (EMA) designed to let users integrate existing thin-wire Ethernets and twisted-pair Ethernets.

According to Robert Monaco, Cabletron's director of product marketing, the EMA is targeted at thin-wire Ethernet users that want to extend their networks through twisted-pair telephone wiring.

EMA, which is designed for use with the company's Multi Media Access Center, has two plugs that support both twisted-pair and thin-wire transceivers.

The EMAxtended Media Adapter has a list price of $550 and is shipping now.

Write to Cabletron Systems at P.O Box 6257, East Rochester, N.H. 03867, or call (603) 332-9400.

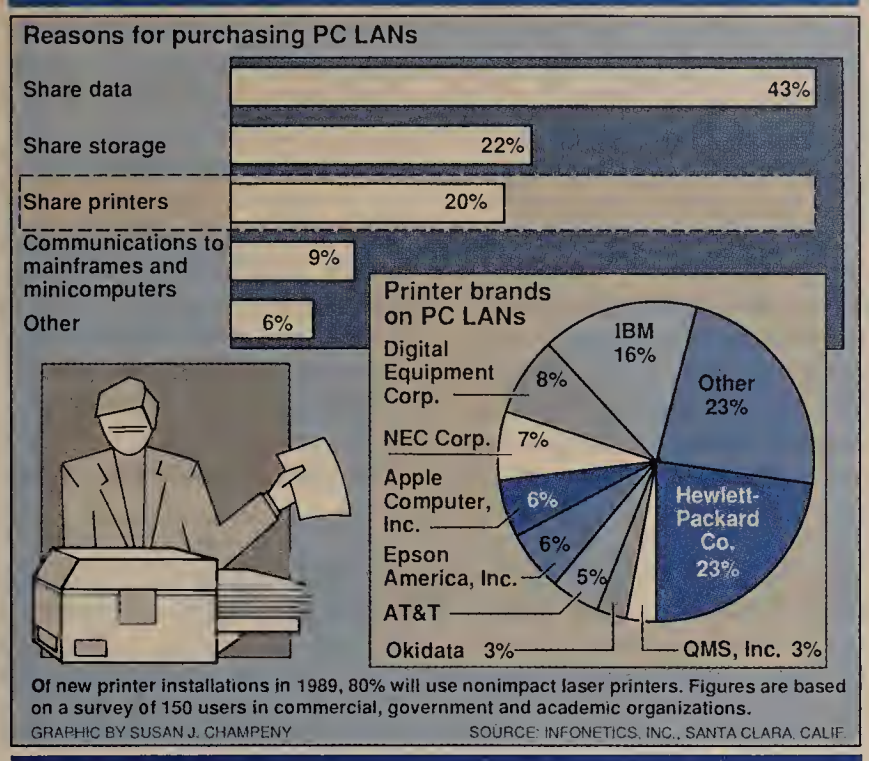
CrossComm Corp. has taken the wraps off a personal computer adapter board that adds fiber-optic network capabilities to personal computers on Ethernet.

The FA1 lets a personal computer act as a network node or hub in fiber-optic star nets. The board can be used with personal computers dedicated as network servers, linking them with a fiber backbone. It can also be used to link personal computers across fiber media.

The FA1 is suited for interbuilding hookups, where the fiber cabling provides security and extends the distance between two nodes. It costs $995 and is currently available.

For more information, write to CrossComm at P.O Box 699, Marlborough, Mass. 01752, or call (508) 481-4060.

Printer preferences for PC LANs



Of new printer installations in 1989, 80% will use nonimpact laser printers. Figures are based on a survey of 150 users in commercial, government and academic organizations.

GRAPHIC BY SUSAN J. CHAMPENY SOURCE: INFONETICS, INC., SANTA CLARA, CALIF.

Open Token Foundation holds inaugural meeting

Group says 15 vendors weighing membership.

By Rex Bowman
West Coast Correspondent

BURLINGAME, Calif. — At its recent inaugural meeting here, the Open Token Foundation (OTF) said that as many as 15 more companies, including IBM, may join the organization within the next month.

The group, which currently has eight members, was founded by 3Com Corp. and Madge Networks, Ltd. to promote interoperability among token-ring net products ("Network makers team up in token-ring association," *NW*, Dec. 5). Robert Madge, Madge Networks' president, was named OTF chairman.

According to Madge, OTF met with 15 vendors, including IBM, Intel Corp., Novell, Inc., Ungermann-Bass, Inc. and Wang Laboratories, Inc. Madge said he is confident that many of the 15 companies will join OTF in the coming weeks.

In a one-page written statement, IBM said it has not yet decided but is considering joining.

IBM's influence

In recent interviews, OTF officials said creation of the group will lessen IBM's influence on the direction of token-ring technology. IBM currently has a 90% share of the market for token-ring nets, according to International Data Corp., a Framingham, Mass.-based research firm.

But Robert Metcalfe, general manager of 3Com's Distributed Systems Division, told attendees that OTF is not anti-IBM. Instead, the group is trying to speed acceptance of token-ring products by promoting interoperability.

In addition to 3Com and Madge Networks, OTF's current members are Memorex Telex Corp., National Semiconductor Corp., Proteon, Inc., Racore Computer Products, Inc., Texas Instruments, Inc. and Western Digital Corp.

To encourage membership, OTF announced that users, vendors and other organizations joining the foundation as contributing members before Jan. 15 will be given a seat on the board of directors. Contributing members must pay $25,000.

OTF also offers associate memberships, with voting privileges, for a $5,000 fee.

Users can become "ordinary members" by paying $500 a year, Madge said. Ordinary members will receive the foundation's newsletter and can participate in any OTF activities.

Madge said OTF's mission is to "promote interoperability of multivendor IEEE 802.5-based and Fiber Distributed Data Interface-based token-ring local-area networks." In pursuing that end, OTF will provide information on token-ring products, publish case studies of multivendor token-ring networks and conduct multivendor interoperability demonstrations. The organization will also hold regular meetings to give users and vendors a forum to discuss implementation and technical issues.

Other nonmember companies that attended the OTF meeting are Apollo Computer, Inc., Architecture Technology Corp., AST Research, Inc., Gateway Communications, Inc., Microcom, Inc., Network General Corp., Nokia Data, Pulse Engineering, Inc., Sytek and Wyse Technology.

Apple's Don Casey reveals net strategy

PC maker's top network executive discusses his move from IBM, new product priorities.

It has been only a few months since Don Casey joined Apple Computer, Inc. as vice-president of networking and communications, but he has already settled in quite comfortably.

Some people might find that surprising considering that, prior to coming to Apple, Casey spent 21 years at IBM — a company whose rigid corporate culture is about as far removed from Apple's freewheeling style as Armonk, N.Y., is from Cupertino, Calif.

Casey's experience at IBM was just what Apple was looking for.

Apple's success in the corporate business market increasingly hinges on its connectivity offerings. Casey seemed a natural choice to direct all of Apple's data communications research and product marketing efforts.

In his tenure with IBM, Casey held various management posts, including vice-president of communications hardware development. In that capacity, he directed all of Big Blue's network hardware efforts, including development of Token-Ring Network products.

In agreeing to an interview with Network World *Senior Editor Laura DiDio — one of his first interviews since moving to Apple in August — Casey imposed two ground rules: no discussion about IBM or unannounced products.*

While he did not ignore his own dictums and give specific product details and delivery dates, a relaxed and congenial Casey conveyed his view of where he expects Apple's networking efforts to go over the next year.

You've said you don't want to discuss IBM. But could you tell us why you left IBM to join Apple?

I left IBM not because I was unhappy. I've been an Apple fan for years. I owned an Apple II for over 10 years, although I didn't talk about it much. During the period in which I was recruited, Jean Louis [Gassee, president of the Apple Products Group] sent a Mac II to my home. I'd never seen one before, and I fell in love with it: I didn't know how good it was. I loved the technology from the start, and the thought of having the opportuni-

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Rural university installs broadband cable network

By Paul Desmond
Staff Writer

BOONE, N.C. — The broadband coaxial cable network Appalachian State University installed eight years ago to support 50 point-to-point circuits has blossomed into a sprawling network that consists of 1,600 terminals, 35 video channels and 20 miles of cable.

Appalachian State installed the broadband cable plant to replace dedicated lines leased from the local telephone company. The network, which gives the university greater control over its communications, runs throughout 50 buildings and supports the school's faculty, administrative staff and 11,000 students.

Today, Appalachian State network managers no longer have to call the local telephone company each time they need to add or relocate data lines. Since the cable serves all classrooms and most campus buildings, changes to the network are no longer a problem, said Tom Culver, manager of telecommunications, computer and management services at the university.

"It gives our people flexibility," Culver said. "It's like a big data bus that's located all over campus."

The broadband cable supports a number of separate data networks as well as video channels. One data net is an Allen-Bradley Co. VistaLAN/1, a 2.5M bit/sec broadband token-passing network that supports point-to-point asynchronous connections between campus computers and workstations. Off-campus users can dial into the net.

VistaLAN/1 supports an array of Appalachian State's minicomputers, including Digital Equipment Corp. VAX 8650s and 8550s, a DEC PDP 11/84, several AT&T Model 3B2s and 3B5s, a Data General Corp. MV/10000

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Apple's Don Casey reveals net strategy

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ty to add connectivity to other environments seemed very exciting.

My observations on the first day I visited Apple were that people enjoyed their jobs, and it would be an exciting place to work. My coming to Apple was a combination of great product, nice people and a super job with lots of opportunity.

Every firm has gaps in strategy that it would like to fill. What's your No. 1 priority in this area?

I hate to number things because someone always gets annoyed. But let me start by dispelling a myth, and that is that I came here to bring networking to Apple — that's not true at all. Have you seen the AppleTalk and AppleShare networks?

During the interview process, they took me into a lab at the Cupertino headquarters and showed me a Mac SE. They just plugged it into the wall, and it was part of the network. The plug-and-play capability is pretty neat.

Shipping networking with every Mac was a good decision and reasonably profound — [so was] the implementation of AppleShare and the attention the company pays to detail. Based on these things, I think the company has always had a good grasp of networking.

Now what we have to do is take that "user-centric" approach and extend it to a multivendor environment. Specifically, we need to attach to IBM and DEC systems, and we have to deliver OSI products. We will do all of these things as well as continue to enhance the functionality of the AppleTalk protocol. I can't pick one thing out of that suite as being the No. 1 priority. Users want all of the items on the list, so you can expect us to go with all of them.

When will MacAPPC ship?

We've got it in worldwide beta test now. Early beta-test sites include a paper manufacturer and a pharmaceutical company in Europe. Providing the APPC interface on the Mac will allow programs written on the Mac to communicate with programs running on IBM systems. It's part of [IBM's] Systems Application Architecture.

Our beta-test sites are using MacAPPC to implement distributed data base applications. They're moving data from their [IBM] DB2 data bases to implement such applications as tracking analysis. They use their 370 system as a file server, while the Macintosh is utilized for manipulation and presentation of files.

Any idea when users can expect that to hit the market?

I'm not going to give any dates or preannounce the product. Everyone knows we're working on it.

How is the strategic alliance with DEC coming along?

Very well. My first involvement with it was when the two executive teams met in the fall. I talk to my counterparts at DEC once a month, and we have developers going back and forth between Massachusetts and California all the time. We're now in the process of developing joint test plans for the forthcoming products.

Any idea when we will see products?

Sure. You can expect us to roll out products and additional product information throughout 1989. I won't be more specific than that. As for the products themselves, we'll do AppleTalk protocols over Ethernet into the VAX machines. We've proved what developers call "tunneling capabilities" to give Macintosh users access to a DECnet network for wide-area connectivity and the Remote Procedure Calling [RPC] interface. RPC will give users the ability to do program-to-program communications in the DEC environment.

What about token-ring connectivity? Everyone is waiting for Apple's token-ring adapter card to be introduced.

Clearly, token-ring connectivity is an important requirement, and you can expect Apple to respond to the requirement. But we're not ready to give an exact date.

Is there an alliance with IBM in the offing similar to the one you now have with DEC?

I was wondering who would be the first to ask me that question. IBM has told the world that the way to connect to IBM systems is to use APPC or LU 6.2, the 3270 data stream, coaxial cable and token ring. Apple will support customers who have those connection mechanisms. Other than that, I'm not doing any work with IBM.

As of a few days ago, Apple had not said whether it will join the newly formed Open Token Foundation. Will you join and if not, why not?

At this time, we have elected not to join. I've read their literature, and we had a representative at their first meeting, but for now, the answer is no.

How are you doing with OSI product development?

[It's going] well, I think. I'm a fan of standard connectivity. Once you've achieved standardization, the ability to connect to any environment becomes a nonissue. Then you have to turn elsewhere for a competitive edge. What Apple has to bring to the table, once connectivity is no longer an issue, is a tremendous system. We see OSI as absolutely fundamental to that product strategy. To do business with the federal government, [OSI] is increasingly important.

Now that you've shed the pinstripes of IBM, do you wear jeans to the office?

Yes, absolutely. I still have a few pinstriped suits left, though. Dressing in jeans just means that I have an extra minute and a half in my workday because I don't have to tie my tie.

Worth Noting

One out of three Fortune 500 companies is not having a Christmas party this year. Among those that will be partying, one-third will not serve alcohol, according to a recent survey by Natick, Mass.-based TeleSearch, Inc., a subsidiary of Fidelity Investments Co.

Dialogue

Do you think increased competition has forced AT&T to offer a wider range of services or become more flexible in its pricing?

"Competition certainly is a factor, but there are two other reasons.

"I think AT&T is trying to change its image of a company that drags its feet in implementing new services and technology. Also, I think AT&T is trying to make customers aware of what they are planning for Integrated Services Digital Network."

Jim Loferski
Telecommunications consultant
General Public Utilities Service Corp.
Parsippany, N.J.

"Competition, competition, competition. AT&T is still trying to differentiate themselves by the quality of their service, but that is beginning to change.

"AT&T has the highest quality service, but it is not always worth the premium when calculated on a price-to-performance basis. Competition, as well as the growing use of fiber, is driving costs down.

"We have noticed that AT&T has been working harder to address customer needs despite the regulatory environment that keeps their hands tied."

Bob Mhoon
Manager of telecommunications and engineering
FMC Corp.
Dallas

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Woolworth opts for EDI to keep pace in retail field

Five-and-ten giant sold on technology's benefits.

By Wayne Eckerson
Staff Writer

NEW YORK — F.W. Woolworth Co., the last of the five-and-ten retailers, is turning to electronic data interchange (EDI) to ensure the integrity of its multimillion-dollar inventories.

Woolworth is readying a worldwide EDI network that will tie together the company's headquarters, distribution centers, stores and regional offices with its buyers and major suppliers.

The net result of the EDI campaign should be to speed delivery of goods to Woolworth's 6,800 stores, keeping the shelves stocked and reducing paperwork throughout the company.

"We have to implement EDI because other retailers are doing it," said William Johnson, director of telecommunications and a 20-year veteran of Woolworth's information systems department.

"Companies that don't use EDI are going to get their merchandise after everyone else, if at all, because vendors will prefer to work with companies that can process orders electronically," he said.

Johnson and others convinced upper management that EDI is a cost-effective tool that makes possible the corporate strategy of speeding merchandise deliveries to stores.

In pitching plans for EDI to management, Johnson never got technical. In fact, he never mentioned EDI. He simply said he had a way to speed the transmission of data within the company and thus streamline Woolworth's ordering and purchasing processes.

The upshot, Johnson told upper management, was that goods would be shipped more quickly, giving Woolworth an edge over its competitors.

Management bought the idea.

This spring, Johnson will conduct a pilot test of an EDI link between one of Woolworth's six major regional divisions and its central buying organization headquartered in New York.

Johnson will connect the sites using Telenet Communications Corp.'s public packet-switched network. Should the pilot test

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BOOK REVIEW
BY ERIC SCHMALL

Special qualities make some workplaces great

A Great Place to Work: What Makes Some Employers So Good (And Most So Bad), Robert Levering (New York: Random House, Inc., 1988), $18.95.

The title of this book alone can draw smiles from readers, proving his first point: Many workplaces are far from great. Relatively few people consider their place of employment a terrific spot to spend most of their waking hours.

Still, exceptional companies do exist and, according to Levering, they possess common traits. By focusing on these traits, Levering hopes that other companies will learn and transform themselves into quality places to work.

The foundation for this work was laid in an earlier book that Levering coauthored with Milton Moskowitz and Michael Katz (*The 100 Best Companies to Work for in America*, Addison-Wesley Publishing Co., Reading, Mass., 1984). That book ranked employers based on hundreds of interviews with employees, managers and officers in firms throughout 30 states. Companies didn't make the list merely on the basis of their size, benefits packages or market share. They achieved this distinction by being profitable and by maintaining a happy, motivated work force.

Levering decided to delve more deeply into these firms to ascertain what traits defined their excellence. He reopened his research, interviewing employees in the top 20 of the original 100 companies. Those results provide the basis of this book.

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Schmall is network systems manager for an insurance holding company.

Profile: Financial Information Standards Organization

Description

Securities industry group dedicated to developing common networking standards for financial services.

Membership

- Seventeen brokerage houses, carriers and stock quote vendors
- Securities and Exchange Commission
- Commodities Futures Trading Commission

History

Conceived in London in 1986; founded in May 1988.

GRAPHIC BY SUSAN SLATER — SOURCE FISO, NEW YORK

Finance consortium eyes net standards

New group is charged with solving datacom troubles facing the securities exchange industry.

By Barton Crockett
Senior Writer

NEW YORK — Representatives from some of the nation's largest brokerage firms, stock quote vendors and stock exchanges have formed a consortium dedicated to developing standards to solve communications problems unique to the financial services industry.

The Financial Information Standards Organization (FISO) is expected to release seven standards documents on critical data communications issues in the first half of next year. These documents will address such issues as building and managing trade settlement networks and the development of a common naming system for financial instruments traded on stock exchanges.

The 17-member group was conceived two years ago and recently drafted its first set of bylaws. FISO members say the group is needed to help users in the securities exchange business overcome nagging networking problems. Participants believe the organization can foster adoption of network standards in their industry in much the same manner as General Motors Corp. did in the manufacturing arena.

"GM really drove home the standards issue in manufacturing," said an information systems executive with a major brokerage firm who requested anonymity. "FISO is our best chance to have the same thing happen here."

Paying for stock quotes

One of the most important issues the group is addressing is determining a standard formula for billing brokerage firms for stock quotes they receive via digital data feeds rather than video feeds.

For years, stock quote vendors such as Quotron Systems, Inc., a subsidiary of Citicorp and London-based Reuters Holdings PLC have delivered stock quotes to traders' desks using video technology.

Billing for such a system was simple since the stock quote vendor could fix his system to broadcast stock quotes to a set number of traders and charge a brokerage firm accordingly.

Now brokerage firms want to receive only digital data so that it can be easily utilized by traders at powerful workstations. Such an arrangement creates a problem for stock quote vendors, however, since a trader who receives data in digital form can rebroadcast it to hundreds of other traders — taking revenue away from stock quote vendors.

"With digital feeds, billing now becomes something of a gentleman's arrangement," said David Isherwood, a FISO board

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> Brokerages want to receive only digital data so it can be used by traders at workstations.
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> Members say FISO is needed to help users overcome nagging networking problems.
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"He was about to spend millions on a system that could become obsolete tomorrow. Ulcer material. I gave him some insurance."

– Carol McLarty, AT&T Branch Manager

"He was redesigning the company's information network. Mainframes and business computers, phone systems, data communications equipment, the whole shebang. And he was justifiably concerned.

What if the system that was perfect for his company today couldn't adapt to new technologies in the future? What if it all became obsolete in five years? It could happen.

I told him if he used AT&T's open-ended approach, it wouldn't happen.

By using AT&T as a strategic business planner and by subscribing to AT&T's system of open architecture, he could customize his information system at his own pace. He could buy just the equipment and services he needed today and have the flexibility to adapt for the future as his business grew and his needs changed.

Other vendors say they have connectivity and flexibility, but it's only within their own system. AT&T offers it from one system to another.

Whether you use our equipment or someone else's.

Since our approach is communications-based, we're able to give you greater control over your communications by putting the power of the AT&T Network into your own hands. For instance, with an AT&T PBX and departmental computer capabilities, you can free your mainframes from managing communications and let them do the job they were meant to do.

But, most important, AT&T's open-ended solutions help protect your investment, which will enable you to add new equipment as new technologies are developed, without scrapping all the equipment you already have.

Partnering with us now can provide you systems with the future built in. That's the best insurance anyone could have."

For more information about AT&T's open-ended solutions, contact your AT&T Account Executive or call **1 800 247-1212**.

AT&T

The right choice.

Qualities make some workplaces great

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Levering finds that great work places have a common trait: They all embrace what he calls the "three R's" that management owes to employees: rights, responsibilities and rewards. Employees have the right to question management policies and decisions, they are given responsibility in their jobs, and they are rewarded when the company prospers and suffer equally with management when it does not.

Levering claims that none of the firms he studied have suffered economically from establishing such progressive practices. In fact, he points to several studies suggesting that these organizations have profited.

According to Levering, most great workplaces achieved that status through a developmental process. From small, family firms or entrepreneurial garage operations, these companies grew to maturity without losing the philosophy of shared rewards, responsibilities and rights.

The managerial class never emerged to push workers outside the circle of influence. Very few places have ever converted from a bad workplace to a great one.

Yet it can happen. Levering presents a case study of Preston Trucking Co., Inc., a Preston, Md.-based trucking firm that successfully made the transition. In the midst of trucking deregulation and declining market share, Preston Trucking's senior management, on the advice of a consultant, realized it would have to put an end to chronic worker-manager warfare.

Preston adopted the strategies that Levering promotes, and the company became a profit-making, great place to work. This came at a heavy cost, however. A large portion of Preston Trucking's management team chose to resign rather than live with the new arrangement.

This example, while encouraging, does little to assure the reader that such a transformation can happen elsewhere. Do "traditional" workplaces have to be on the economic ropes or facing a severe personnel crisis before management will try Levering's formula? Can there be an evolutionary path? Levering does not address these issues.

Regardless, managers at any level would do well to take his advice.

Dialogue

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"AT&T's management and employees are beginning to understand how to market their services in a competitive environment. After deregulation, AT&T had to learn how to become a customer-oriented company. At first, some of the things they did to market their goods seemed rather strange. However, they've been through some reorganizations that have helped them focus their energies toward addressing customer needs."

David Forejt
Associate vice-president for computing and telecommunications
University of Pittsburgh

Woolworth opts for EDI to keep pace

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prove successful — and Johnson expects it will — the remaining divisions will have EDI links by next fall.

Once in place, the network will transmit purchase orders from any of Woolworth's divisions to Woolworth buyers and eventually to major suppliers.

Woolworth's central buying organization will track all purchase orders and confirmations and immediately update the appropriate accounts. Today, most of this work is done by telex or mail.

Management's dilemma

Woolworth's EDI endeavor is the culmination of a three-year struggle to cut costs by centralizing purchasing.

Previous efforts failed to live up to Woolworth's cost-cutting expectations, primarily because the company did not standardize its forms-reporting activities.

For instance, when the company started the purchasing consolidation, its divisions — located in West Germany, Canada, the U.S. and Australia — each used a different ordering system.

To compensate, the central purchasing office hired workers who keyed purchase-order slips into a central computer.

For management, this labor-intensive process minimized the advantages of having a centralized buying system.

After weighing the available options, Johnson realized the best solution was to implement an EDI network using Telenet and a third party to translate the different order formats from different Woolworth divisions into standard EDI formats.

> Previous efforts failed to live up to cost-cutting expectations.
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This network could be implemented faster than other options and would provide a better audit trail of documents as they passed from divisions to buyers in the field and back again.

In addition, an EDI network would position Woolworth to exchange purchase orders electronically with vendors in foreign countries.

Woolworth will use a data-formatting service offered by Ordernet Services, Inc., a Columbus, Ohio-based EDI transmission provider and developer of EDI formatting and communications software.

Ordernet has a joint agreement with Telenet to provide EDI services for Telenet customers.

In time, Woolworth will format its own EDI data and drop the Ordernet service, Johnson said. However, this won't happen until Woolworth has enough EDI traffic to warrant the expense of purchasing formatting software and buying processor upgrades for its computers.

Fortunately for Johnson, parts of the EDI network are already in place. A year and a half ago, Woolworth used the Telenet network to link its central purchasing office with its Hong Kong office and one of its divisional offices. Woolworth uses the net to carry messages between the sites.

> The task will be to integrate the remaining divisions into this net and wean them from manual communications.
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Johnson's task will be to integrate the remaining divisions into this network and wean them from their reliance on manual methods of communications. Once that is done, Johnson will work toward connecting Woolworth's vendors into its network via Telenet.

Although the integration of new EDI components with installed gear is a formidable task, Johnson said, the most time-consuming part has already been completed.

Since 1972, Johnson has been involved in piecing together Woolworth's internal network. This net links Woolworth's headquarters, distribution centers, stores and regional offices to company data centers.

Johnson would give few details but said there are two data centers and 6,800 Woolworth stores worldwide. Each of those stores is equipped with a personal computer that is linked to one of the data centers via a dial-up line. Headquarters and regional offices are tied to the data centers via leased circuits.

"The biggest challenge has been building an internal network that could provide the capabilities of doing things like EDI," Johnson said. "It is gratifying to know that we built a strong foundation so that now we can offer EDI without going through additional work."

Finance consortium eyes net standards

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member and assistant vice-president in the information systems department of Shearson Lehman Hutton, Inc., based here.

FISO wants to change this and develop a standard method to bill firms for digitally delivered stock quotes. The standard may call for a software key that traders must buy and install on their computers to receive quotes. It could also include a system for billing firms based on the number of registered traders they employ.

June target date

FISO hopes that such a standard would encourage more stock quote vendors to sell digital data feeds, which some are reluctant to do now. The group plans to issue a draft standard on the issue by June 30.

In its struggle to establish standards, FISO faces an uphill battle. Some users question the need for the organization when other more established groups, such as ANSI and the International Standards Organization, could address many of the same issues.

But participants in FISO said they believe that once they start distributing their standards proposals, the group will win a wide following.

"Sure, we're not widely respected right now," said Leo Hoarty, vice-president of capital markets at PaineWebber, Inc. and one of FISO's founders. "But we hope to light a fire in the industry when we start publishing our standards papers this winter."

PRODUCTS & SERVICES

THE LATEST OFFERINGS FROM VENDORS AND CARRIERS

Worth Noting

Next issue: *Network World* offers prognostications from industry experts on what to expect in 1989 in the areas of OSI, T-1, federal regulation, ISDN, electronic messaging and more.

First Look

Tri-Data unveils security modems

Tri-Data Systems, Inc. recently introduced a line of high-speed security modems that transmit at speeds of 2,400 bit/sec and 9.6K bit/sec.

Called **OS Guardian Modems,** the products provide synchronous and asynchronous communications in both full- and half-duplex over dial-up and leased lines. A central-site OS Guardian will prompt remote users to enter a password or logon procedure and then hang up. If that password or logon procedure correctly matches the one stored in the central-site modem's memory for that user, the modem will dial back the remote modem and establish a connection.

OS Guardian modems conform to Bell 212A and 103J standards as well as CCITT V.22bis and V.32 standards. The modems use Microcom, Inc.'s Microcom Network Protocol error-control scheme and data compression.

An operator at a network center can access the modems remotely and reconfigure password and logon directories, commands and options. This enables operators to ensure the security of user phone numbers, passwords and logon information.

The 2,400 bit/sec and 9.6K bit/sec modems come in stand-alone or rack-mounted models and range in price from $750 to $2,275. Discounts are available for purchases of 100 units or more. The products are available now.

Tri-Data Systems, Inc., 1450 Kifer Road, Sunnyvale, Calif. 94086, or call (408) 746-2900.

Octel adds features to Aspen line

By Jim Brown
New Products Editor

MILPITAS, Calif. — Octel Communications Corp. recently bolstered its Aspen voice-processing software by adding features that allow it to conduct telephone surveys and take orders.

Advanced Feature Package II supports AspenForms, which lets Aspen ask callers a series of questions and record the answers. AspenForms comes in two versions: Voice AspenForms and Dual Tone Multi Frequency (DTMF) AspenForms.

Voice AspenForms records voice responses to questions, while DTMF AspenForms lets callers respond to questions by using a telephone keypad.

Voice AspenForms is typically used when callers are asked for their name, address or opinion. DTMF AspenForms can be used to support order-taking tasks in which callers are asked to supply numerical data such as account numbers, parts identifications and purchase order numbers.

Digitized voice responses are stored in an Aspen mailbox until the user can listen and transcribe them.

Numerical responses are collected and can be downloaded to a microcomputer attached to the Aspen voice processor via an RS-232 link.

Voice AspenForms was beta-tested by Hillenbrand Industries, Inc. of Batesville, Ind. The company's internal travel agency used the software to record employee requests for travel arrangements, including airline and hotel preferences.

The company is currently beta-testing DTMF AspenForms.

Advanced Feature Package II continues to support existing audiotex and menu-driven call-routing modules. Audiotex enables callers to access prerecorded information such as weather reports and sports scores. Menu-driven call routing lets the Aspen support an automated-attendant feature and other voice-response applications.

Pricing

Advanced Feature Package II supporting Voice AspenForms on an Aspen, Aspen Branch or Aspen Branch XP voice-processing system costs $9,000. The software costs $13,000 on an Aspen Maxum. It is available now.

Pricing for Advance Feature Package II supporting DTMF AspenForms, which will be available in February, has not been set.

Octel can be reached by writing to 890 Tasman Drive, Milpitas, Calif. 95035, or by calling (408) 942-6500.

Mac users gain access to IBM graphics software

By Wayne Eckerson
Staff Writer

SAN JOSE, Calif. — Digital Communications Associates, Inc. (DCA) recently introduced a graphics software add-on package for its MacIrma 3270 emulation board that lets users of Apple Computer, Inc. Macintosh personal computers work with IBM mainframe graphics software.

The MacIrma Graphics software supports graphics communications between the Macintosh and graphics applications running on IBM mainframes.

Operating with DCA's MacIrma boards, which let Macintosh models emulate IBM 3179G and 3192G graphics workstations, the package can support graphics exchanges between Macintosh systems and IBM's Graphical Data Display Manager. This IBM feature helps control how graphics from mainframe applications are displayed at a terminal or at a personal computer emulating an IBM device.

MacIrma Graphics lets a Macintosh user access mainframe applications such as IBM's Interactive Chart Utility, SAS Institute, Inc.'s SAS/Graph and Computer Associates International, Inc.'s Tellagraf. Graphics can be stored on the mainframe or downloaded to the user's Macintosh, where they can be stored or printed.

In addition, a copy-and-paste feature lets users incorporate a graphic into a Macintosh-based file.

Macintosh computers running MacIrma Graphics are connected to a mainframe by a coaxial cable that is routed first through an IBM 3274 cluster controller.

Mainframe graphics are stored on Macintosh systems in formats that allow users to share graphics among IBM Personal Computers, Personal System/2s and other Macintoshes.

MacIrma Graphics software costs $195 and is available now. DCA is also offering a bundled package with MacIrma Graphics and the MacIrma emulation card for $1,295.

DCA can be contacted at 1000 Alderman Drive, Alpharetta, Ga. 30201, or call (404) 442-4000.

Sungard offers voice net recovery service

Company supplies users with cellular phones to replace switched voice service after CO failure.

By Jim Brown
New Products Editor

NEW YORK — Sungard Recovery Services last week announced several network disaster recovery services, including its first offering for voice networks.

The company also rolled out a very small aperture terminal-based disaster recovery service and a T-3 transmission service that lets customers transmit data to Sungard backup data centers at up to 45M bit/sec. Sungard maintains its own data centers that can assume data processing chores for a customer affected by a network disaster.

Sungard's SunNet Cellular V service will provide customers with cellular radio telephones and service when a central office failure knocks out switched voice service.

With SunNet Cellular V, Sungard will lease cellular telephones to customers for a flat monthly fee. When switched service is disrupted, Sungard will inform cellular radio service providers to begin service for the affected customer.

Sungard will also engineer the cellular network service to support the customer's existing call volume. This engineering service includes instructing long-haul carriers to route incoming calls away from a downed local central office and to the cellular carrier.

The monthly fee for SunNet Cellular V ranges from $50 to $500, depending upon the number of cellular telephones needed. The $500 monthly fee includes 50 cellular telephones and engineering services. Users will pay usage fees when the cellular service begins operating.

VSAT-based service

With Sungard's VSAT service, dubbed SunNet Switched Satellite Service, users will lease VSATs from Sungard for a monthly fee. The VSATs will be placed at user locations and will transmit to any of Sungard's three earth stations at speeds ranging from 56K bit/sec to 1.544M bit/sec. Sungard is currently building earth stations in Philadelphia, Chicago and San Diego.

When a client company's primary network fails, the VSAT network is used to transmit data to Sungard's earth station. Sungard has agreements with four satellite transmission vendors to lease transponder space when necessary. This arrangement means Sungard customers do not have to pay a fee to keep transponder time on retainer. Instead, they pay for satellite time only when it is needed.

The SunNet Switched Satellite Service ranges in price from $3,000 per month for a single VSAT transmitting to a Sungard earth station to $6,000 per month for three VSATs transmitting to a Sungard earth station.

Sungard also expanded its existing Sungard Network Access Point (SNAP) service, which enables customers to transmit to Sungard backup data centers via leased lines.

The SNAP service offers T-3 transmission speeds from user sites to the company's backup centers here and in Philadelphia. T-3 links to Sungard's Chicago and San Diego backup data centers are also planned.

> Sungard customers do not have to pay a fee to keep transponder time on retainer.
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The basic SNAP service is used to route data traffic from a customer's failed data center to one of Sungard's facilities. To do this, customers lease a short line to a Sungard multiplexer site. When disaster strikes, the data flows over that circuit, through the Sungard multiplexer and to the backup data center.

Sungard currently supports T-1 links between major cities and its backup data centers. Customers link to Sungard multiplexers using lines operating from 9.6K bit/sec to T-1 speed.

The T-3 SNAP service will let a customer link to Sungard equipment via a T-3 line or multiple T-1s. Sungard charges a flat monthly per-line fee to connect to its multiplexers. The charge to connect a T-1 line to Sungard equipment is $100 a month.

Usage charges do not take effect until transmission to a Sungard data center begins. Those usage fees vary depending upon the tariffs in each of the areas served.

Sungard can be reached by writing to 1285 Drimmers Lane, Wayne, Pa. 19087, or by calling (215) 341-8700.

OPINIONS

TCP/IP

BY JAMES HERMAN

The next few years may be the golden age

Ten years from now, the late 1980s and early 1990s may well be viewed as the golden age of Transmission Control Protocol/Internet Protocol. Signs indicate that this suite of vendor-independent protocols, designed by the U.S. Department of Defense, has expanded beyond its traditional stronghold in government and academia into business applications. Organizations struggling with the challenge of interoperability in a multivendor environment should seriously consider adopting TCP/IP as an enterprisewide standard for host-to-host communications.

TCP/IP will be important in commercial networks for four reasons. First, TCP/IP is based on an internetwork architecture, which enables these protocols — most importantly, IP — to support the interconnection of separate networks such as public networks and local- and wide-area networks. Network interconnection is one of the most important issues network planners currently face, primarily due to the rapid proliferation of local nets. Major vendor architectures such as Systems Network Architecture and Digital Network Architecture do not contain an internet protocol layer, making it difficult to integrate diverse kinds of networks. For this reason, many local net bridge, router and gateway vendors have chosen TCP/IP as the de facto standard in multivendor environments.

In addition, IP contains an addressing standard that allows the explicit designation of network numbers. The addressing standard provides for network numbers as long as 21 bits, allowing space for millions of networks. This additional layer of addressing permits users to link separate networks together to form an end-to-end communications system in which all end points are addressable on a peer-to-peer basis.

The second reason for TCP/IP's commercial importance is the fact that it is a vendor-independent protocol. The growing use of Unix as a standard operating system provides strong evidence of user interest in gaining independence from vendors. TCP/IP is a natural fit with Unix: Most versions of Unix have a TCP/IP option, and most versions of the protocols were written in the C language and were originally designed for Unix.

An off-the-shelf networking aid

With or without Unix, TCP/IP is a working, off-the-shelf aid to vendor-independent networking. Due to 10 full years of effort by the Department of Defense, the TCP/IP suite of protocols is now available on almost every computer system in general use today. With its basic functions of file transfer, remote logon and electronic mail, TCP/IP meets the major needs of cross-vendor interoperability. Even IBM has recognized TCP/IP's importance, as evidenced by its fall announcement that these protocols will be standard on MVS.

Third, TCP/IP is mature and robust. The first TCP/IP specifications were published in 1976, and TCP/IP has been widely used in the Defense Department's Advanced Research Projects Agency Network since 1980. Due to TCP/IP's popularity at universities, a generation of college-trained computer scientists is now familiar with these protocols and the internetwork architectures they can compose. TCP/IP's standards have been stable for many years and are not likely to change.

Fourth, TCP/IP is the first step to Open Systems Interconnection, which is patterned, in part, after TCP/IP. The OSI protocols are not yet mature enough to be used for mission-critical business applications; only a few implementations are currently available, and the standards are still changing.

In five years, OSI will have the stability TCP/IP enjoys today, and internetworks in which the two protocol suites peacefully coexist will be common. But for many planners, the message is simple: Why wait five years for OSI when you can get most of its benefits by going with TCP/IP today?

Herman writes, teaches and consults on telecommunications technology in Cambridge, Mass.

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Network World
Box 9171, 375 Cochituate Road
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501 Second Street, Suite 600
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415-978-3160

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EDITORIAL

Racing at a snail's pace toward the global village

"The new electronic interdependence recreates the world in the image of a global village." With that statement, Marshall McLuhan, in his book *Understanding Media*, coined the term "global village" in 1966.

Since then, global electronic communications networks have brought McLuhan's concept somewhat closer to reality. But what we have today is a global city rather than a global village. In his recent book, *The Media Lab: Inventing the Future at MIT* (an in-depth look at the Massachusetts Institute of Technology's New Media Laboratory), author Stewart Brand sums things up in this way:

"The actual experience of global connectivity is utterly urban. The world's villages remain wonderfully various and distinct; the world's cities are more alike each year. Cities are so intensely linked with each other that they increasingly act, and look, like boroughs of one large city which is situated everywhere and nowhere."

As Brand points out, the major urban areas are most closely linked today. They're heavily interconnected via cables, radios and satellites that support a wide variety of communications services: everything from voice telephone links and telex to facsimile, electronic mail, electronic data interchange, video teleconferencing and electronic transfers of funds and software.

But what about the villages? Smaller towns and rural areas will not enjoy the fruits of the information age until much later. City dwellers were the first to enjoy paved roads in and between their urban enclaves, while many rural roads are still unpaved today.

The same pattern will hold true for deployment of new communications technologies. Consider, for example, Integrated Services Digital Network and all of the digital communications services and information services that will flow through ISDN pipes.

> As the ISDN example illustrates, the remaining obstacles to wiring the global village are socioeconomic, not technological.
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ISDN services will be enjoyed first by large corporations in major urban areas. Then ISDN use will slowly fan out geographically and filter down economically. Remember, the majority of the urban and rural poor still don't even have telephones.

As the ISDN example illustrates, the remaining obstacles to wiring the global village are socioeconomic, not technological. The biggest challenge is to ensure that the benefits of the new electronic products and services of the information age are enjoyed by rich and poor people, big and small companies, and industrialized and developing nations alike.

In the end, it all comes down to balancing consumer and corporate interests. It's always the mass consumer market that drives wide availability of new products and services: That was the case with the telephone in the 1920s and the television in the 1950s, and it will be the case with ISDN in the 1990s.

But a mass consumer market in digital communications services and information services is not likely to develop until carriers complete several changes that are just beginning to be made in the public network.

Automatic number identification and other network services related to Signaling System 7 must be supported by the majority of telephone switches. Telephone company agreements with third-party service providers must be made consistent worldwide. Fiber cabling must be installed in the majority of local loops. And finally, inexpensive Minitel-style workstations (either terminals, personal computers or so-called "smart phones") equipped with ISDN Primary Rate Interfaces must become nearly as common as standard telephones.

Will the current deregulatory climate sufficiently encourage quick deployment of all the new facilities and services necessary to the global village? Or will some new regulatory structures be needed? The latter alternative is the safer bet.

OPINIONS

THE FUTURE OF ISDN

BY MARY JOHNSTON

Carriers must address more of users' ISDN concerns

Since before divestiture, large telecommunications users have complained loudly about the "order-taking mentality" of their local telephone companies and long-distance common carriers.

The IBM representative's visibility and tenacity — in contrast to the telephone company's benign neglect — has many managers of large telecommunications systems feeling more confident about building private networks; they reason that they can do a better job for themselves than their all-but-invisible order takers have done thus far.

Over the last few years, the common carriers have struggled to overcome this negative image, launching flashy advertising campaigns for their information solutions and marketing the miracles of one-stop shopping.

Many carriers looked to Integrated Services Digital Network as the technological advancement that would help them move into the 21st century, bringing the sophistication of data communications to the telephony world. Several users — at times overwhelmed with operating their now highly complex private networks — hoped ISDN would also drive an improvement in the carriers' account management techniques.

However, if recent activities at the National Institute of Standards and Technology (NIST) North American ISDN Users/Implementors Forum are any indication, the carriers are still having trouble understanding that selling solutions involves more than filing a tariff for a transmission service.

The goal of the NIST Forum is to open the lines of communication between the potential buyers of ISDN products and the vendors committed to developing ISDN services and applications. The forum is structured to focus on users and to position them as drivers of ISDN implementation in North America.

Six industry-related users groups have been formed to identify ISDN application requirements, which will then be communicated to the implementors. The implementors will evaluate these application requests, route them to technology-specific working groups and eventually develop implementation guidelines for software and services to support each application requirement.

An ongoing dialogue between end-user sponsors of each application and the appropriate implementor working groups will ensure that the end result bears a close resemblance to the original request.

While getting users and implementors to talk to one another is obviously a good idea, the dynamics of the NIST Forum have yet to prove that it will be successful.

> The NIST Forum is structured to position users as drivers of ISDN implementation.
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During the most recent meeting in St. Louis, several applications requested by end users were discouraged by implementors on the grounds that they were not real applications. If an application is defined as an Open Systems Interconnection higher layer protocol or a software package supporting a specific end-user function, many user requests were not, in the implementors' opinions, real applications.

In fact, close to half of the application requests actually addressed the end users' needs for end-to-end connectivity guarantees across different vendors' products or ISDN procurement decision support models.

Specifically, the user forum approved such applications as OSI and Government OSI Profile support by ISDN; identification of a core set of supplemental services that all vendors will support; and development of cost information and models to support users in the cost justification of ISDN investments.

Many implementors argued that users' requests were not necessarily dependent on the ISDN protocols and were not, therefore, appropriate fodder for implementors' consideration. This attitude simply confirmed many users' suspicions that purveyors of ISDN still don't understand that users must be able to depend on new technologies *before* they recommend purchasing them. Managers of large networks are unwilling to invest in new technologies and services without guarantees of connectivity and cost-effectiveness.

Of course, applications of the more traditional definition, such as incoming call management, and ISDN support for security and heating, ventilation and air conditioning system monitoring are also required if the technology is to sell in large quantities. Here, at least, the implementors do seem genuinely interested in listening to users and developing solutions.

In fact, the carriers and equipment providers seem almost overly eager. Vendors appear to have massaged many user requests for so-called real applications prior to their introductions at the forum.

As a result, some application requests are too tightly coupled with a single vendor's technology and do not provide the forum with enough latitude to develop universal application standards.

The combination of vendor overexuberance in detailing appropriate applications and a disdain for inappropriate applications is only serving to undermine the credibility of the NIST Forum. Vendors' unwillingness to assist end users in the full evaluation of ISDN costs and performance, as well as their inability to develop realistic schedules for compatibility and transparency, does a disservice to the entire industry.

Instead of arguing about what is or is not an application, the members of the NIST Forum should recognize users' deep frustrations and step up to the challenge of addressing all their needs.

Failure to do this, particularly by the carriers, which have been among the earliest and most vocal ISDN supporters, will slow adoption of ISDN throughout North America.

Johnston is a senior consultant with BBN Communications Corp., a telecommunications consulting group in Cambridge, Mass.

TELETOONS

BY FRANK AND TROISE

CALL FOR AUTHORS

Network World is seeking authors to write comparative reviews of network-related products. These reviews should contrast and compare the features, functions and costs of two similar products or services that are in direct competition with each other.

Reviews should contain direct comparisons of the capabilities of each product or service and should explain any advantages that one offering has over the other. Information on the important technical characteristics of the products or services should also be included. However, a reviewer should avoid excessive detail as well as simply listing features and specifications gleaned from vendor brochures.

The goal of the product reviews is to provide an in-depth, practical, management-level discussion of how each product can be applied and used. Reviews should not be tutorial in nature.

Direct quotes from users of each product or service reviewed should be included in the article. Also, with each review, the author should submit a small chart that provides a general comparison of functionality and price.

Comparative reviews should be approximately 1,300 to 1,500 words in length, or about six or seven double-spaced, typewritten pages.

Paper manuscripts of reviews should be double-spaced and letter-quality.

If you're both a writer and an expert on data, voice or video networking products, call Steve Moore, features editor, at (508) 820-2543, ext. 732.

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Columns should be timely, opinionated, literate, thoughtful and accurate.

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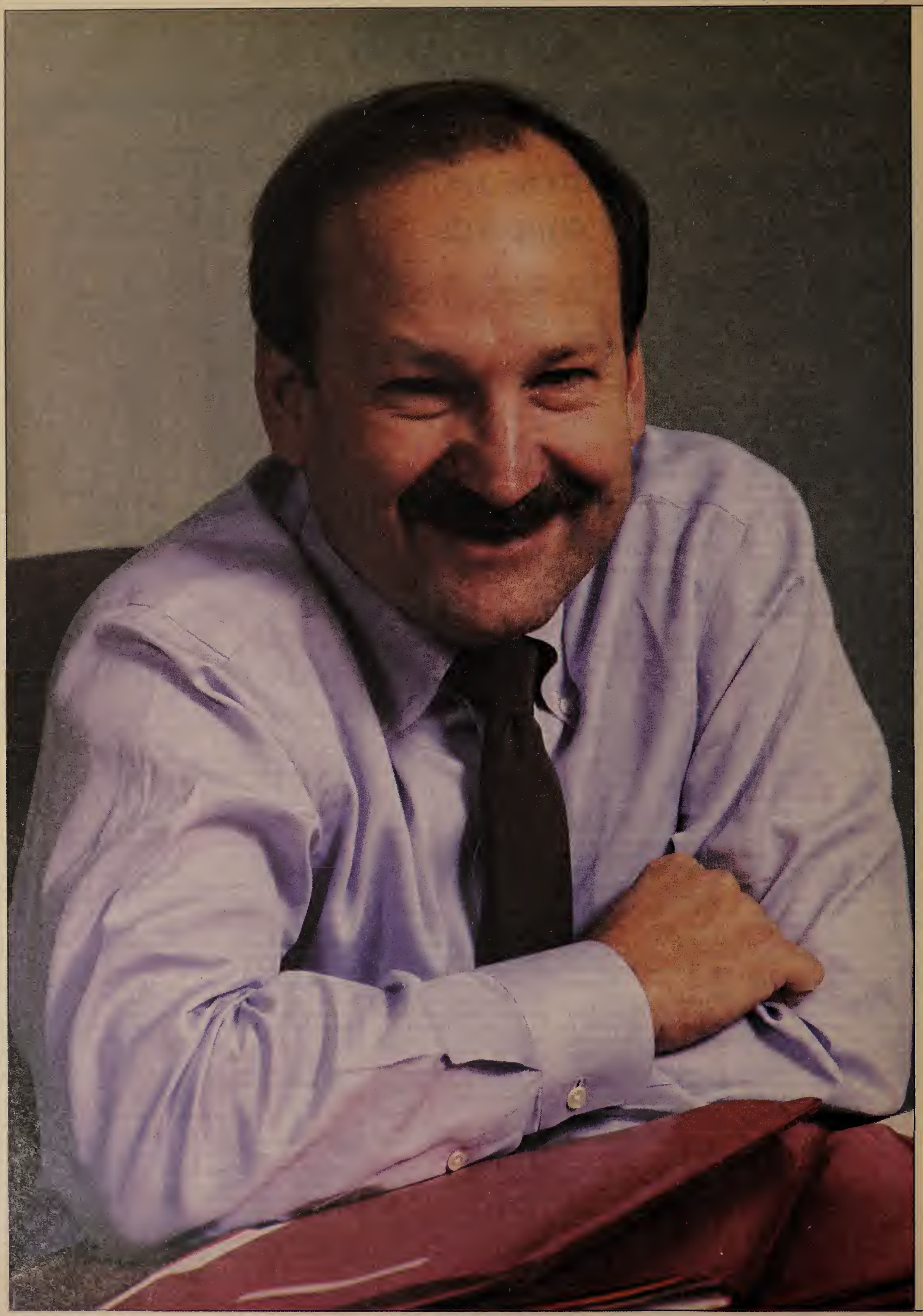

"We build big networks"

Ralph Ungermann shares his views on open systems, multivendor connectivity and more than 20 years in the networking business.

Ungermann-Bass, Inc. of Santa Clara, Calif., is one of the better established, and quietest, vendors of local networks in the world. With projected sales of more than $200 million this year, it's also one of the largest.

Known as a consistent performer in the sometimes financially rocky communications industry, Ungermann-Bass has maintained profitability and a solid customer base since its inception in 1979. So it was a bit of a surprise earlier this year when the company announced that it would become part of Tandem Computers, Inc.

Company President and Chief Executive Officer Ralph Ungermann, who founded Ungermann-Bass with Charlie Bass, was the architect of the Tandem alliance. No stranger to corporate deal-making, Ungermann had been a founder and chief operating officer of Campbell, Calif.-based Zilog, Inc., the producer of the Z80 microprocessor that was so important to early microcomputer products and to the development of the personal computer industry.

Prior to Zilog, Ungermann held management positions at Intel Corp. in Santa Clara and Collins Radio Co. in Cedar Rapids, Iowa, where he worked on developing computer networks in the mid-1960s. He entered the industry straight out of college, with a master's degree in logic design and computer architecture and a bachelor's in communications.

Outside of his corner office in Santa Clara and the boardrooms of Ungermann-Bass and Tandem (where he is currently a director), Ungermann spends most of his time on the road, meeting with network users and managers to determine Ungermann-Bass' market strategy and product direction.

Network World Features Writer Bruce Guptill caught up with Ungermann between trips and spoke with him about his company's user strategy, the Tandem deal and Ungermann's changing role in the industry and in the company he cofounded nine years ago.

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When did you first get into the computer networking business?

When I joined Collins Radio in 1965, the company was already working on networks to connect computers. In fact, in the late '60s, Collins had developed a multimegabit LAN. Unfortunately, the cost per port was about $40,000, not really cost-effective.

Why did you leave Zilog and form Ungermann-Bass?

In 1978, Exxon [Corp., Zilog's primary investor] decided they wanted to pull all their operations together into a single company, and that included Zilog. I didn't think it would work and felt I would be better off somewhere else. I left the company in late 1978.

I took a few months and went out and talked to people in the [computer] field to see what they wanted. Based on that experience, I saw a need for products to connect all those computers out there.

Eight or nine months later, we formed Ungermann-Bass.

And now, nine years later, Ungermann-Bass is part of Tandem?

Yes.

Did Tandem buy Ungermann-Bass, or was it a merger? How would you characterize the transaction?

It's certainly a merger. We have kept the companies separate and focused on our own business plan. I approached Tandem; UB really initiated and drove the merger. We felt it was the best thing from our point of view.

At the same time, it was consummated very quickly because I'm sure Tandem felt it was the same thing for their side. It was one of those cases where we had been working together already, so we already knew that both companies could benefit a lot. It happened very quickly. The merger was announced in February and finalized in June.

> "Our job would get easier and easier if there were fewer standards and if people adhered to them better."
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What brought Tandem into the picture? Was Ungermann-Bass a takeover target?

About a year ago, I began to believe that in order to really be the No. 1 player in this business, we needed to be part of a larger organization.

This year, we'll have well over $200 million in revenue. But we're playing in a game where the primary networking vendors are IBM and DEC — big, big companies. We felt we needed to be part of a larger organization to give our customers a sense of more stability and to leverage some of that capability. And so I began to look around for partners about a year before the merger. In fact, we worked with companies on potential arrangements throughout 1987.

We came to believe that Tandem was the No. 1 potential partner because they had been very successful selling strategic computer systems to big companies — against IBM.

It was also felt that Tandem clearly needed to have a networking solution because their competitors have very good networking solutions. So it was a very good match on Tandem's side as well.

What does the marriage bring to the users?

To the average customer, the merger will have no real impact. We've kept the businesses autonomous, so that we're still selling a different product to a different group of users. We sell communications systems; they sell [online transaction-processing] systems. It's the same company, but different groups within the company.

What does Tandem bring to Ungermann-Bass in addition to financial backing? Its market presence, its strategic orientation, its systems products?

Not so much its systems products as very strong relationships with major companies. They have an A+ rating by almost all their customers in terms of their ability to deliver product and make it work in a production or on-line transaction-processing environment. And that's what networks are all about.

Service and support is the critical issue. By being part of a company that has that reputation and the resources to deliver that support, we're better able to take advantage of our product strengths and position in the marketplace.

Is Ungermann-Bass targeting the same markets as Tandem?

No. In fact, our initial customers were primarily manufacturing companies, especially aerospace companies, like [The] Boeing [Co.]

[Ungermann-Bass also focuses on] major large universities and government systems integrators. But we have always recognized that the financial services area — and the services area in general — was going to be a huge market for networks because information is their business. So we felt that this merger would really allow us to be successful in this marketplace.

> "The fundamental difficulty in our business is getting an end-user sales force organization to go out and properly design, install and make these things really work in a production environment."
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Are Tandem's and Ungermann-Bass' sales forces joining efforts in any areas?

We have partnerships with other computer companies and other communications companies that we jointly market with, and Tandem is one of those. If Tandem is calling on a major stock exchange that needs a network, they're sure to invite us in to sell also. The same thing happens with some of our other joint marketing partners.

Does Ungermann-Bass have any products under joint development with Tandem?

We want Tandem to have a great big open communications pipe sticking out of its processors. Then we can just make our products fit right into that pipe. You'll see Tandem coming out with very strong open interfaces that we can then connect to.

So, unlike with other manufacturers, where we have to reverse-engineer the proprietary interfaces to hook up with them, our strategy with Tandem is just to make sure they have good, strong open interfaces. Therefore, we don't need to work on any specific products with them.

Has your personal role changed at all?

No. I'm on the board of Tandem and I'm an officer of Tandem so I get involved in some Tandem activities, but a relatively small amount of my time goes into that. The vast majority of my time still goes into Ungermann-Bass.

I'm on the road about 95% of the time, meeting with customers to find out what they need and what's going on in the market.

And what are they telling you?

The issue is [how to serve] the customer running all these different applications across the network — each one of them not adhering to standards quite properly, changing all the time.

We need to get the right level of support to a customer so that he can solve IBM problems and DEC problems and everything else, and make the network work in this multivendor environment.

Ungermann-Bass products claim to support almost every major standard in communications. How can one company serve so many masters effectively?

That's been a question since we formed the company. A lot of people said it was not possible to go off in these different technological directions. In fact, we're only serving one master: the customer who wants to interconnect a number of different products together.

The technology issues are not that difficult. If you can master TCP/IP, being a master of OSI is a relatively small step. It's a very similar kind of product, with very similar kinds of issues.

The fundamental difficulty in our business is getting an end-user sales force organization to go out and properly design, install and make these things really work in a production environment. The technology issues are the easiest part by far.

In fact, our job would get easier and easier if there were fewer standards and if people adhered to them better. The problem is that the standards are exploding in all directions simultaneously so that there are more standards today than there were yesterday, and that's going to be true again tomorrow.

Is the broad product line a reason for the company's success?

The breadth of the product line is critical. When we started out, everybody said, 'Nobody can [support so many methods of connectivity].' It turned out that every single [network] vendor and even the computer companies now have to support the same thing.

You're not in business if you can't support token ring and Ethernet. You're not in business if you can't support TCP/IP and OSI and SNA. You're just not there; you can't sell to anybody if you don't support those things. Everybody is driving to have that breadth of product line now.

Talking about the multiplicity of standards: Do you see the connectivity marketplace migrating in any particular direction? Is TCP/IP an interim solution? Is OSI the way of the future?

We made a huge bet that OSI would be here much sooner. We've made an enormous investment in [support of] ISO/OSI protocols. But what the customers really want is the best connectivity they can get. And they very quickly learn that they can get that connectivity much better on TCP/IP than they can on OSI.

Why? OSI is evolving and is enormously complex. It's taken years for anybody to implement anything they could use. So what customers had to do was either pick TCP, which they could make work today, or go out and invest enormous sums in applications software that they would have to develop [for OSI].

TCP/IP is here, and it works; OSI is going to be here sometime, and it doesn't work. So it's a pretty easy decision.

What are the real standards issues facing users then?

Users should be worrying about 'How do I make my business more profitable?' OSI and TCP/IP have nothing to do with that. The real issues are 'How can I make my business better than my competitors'?' and 'What's the best way to do that?'

> "TCP/IP is here, and it works; OSI is going to be here sometime, and it doesn't work. So it's a pretty easy decision."
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Well, the best way to do it today is to build your systems on TCP. And it's going to be that way for quite a while because customers are making the investment in installing TCP.

And they're going to be slow to change unless there's some overriding, huge improvement [in OSI-based product availability]. And TCP/IP works; it does the job.

What's Ungermann-Bass' strategy in regard to OSI-based products?

We're putting the vast majority of our effort into delivering TCP/IP today and waiting for more OSI connectivity to be offered by the industry. It's got to be more viable before customers will get in back of it.

I think people used to think OSI would be here in a year or

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Close to the vest

CONTINUED FROM PAGE 1
money is going. Less than 50% of the managers contacted in the survey were willing to talk openly about how much their company plans to spend next year on communications and in what areas the money will be spent.

According to analysts, this attitude reflects the growing importance of communications in America's overall business plans.

"We don't use 'competitive advantage' anymore when talking with clients about communications," says Cory Van Wolvelaere, senior telecommunications manager for the Chicago-based Telecommunications Consulting Practice of the accounting firm Arthur Andersen & Co. "We use the term 'competitive necessity.' "

Hub Vandervoort, senior telecommunications consultant in the Waltham office of Computer Task Group, Inc., says, "Simply put, companies want to talk freely with their business partners and prefer electronic interfaces. The '89 budgets reflect the strategic importance of this."

Vandervoort says the reluctance of companies to discuss budget plans isn't hard to understand. "They view their budgets and organizational plans as competitive weapons," he says. "Companies regard the way they run their businesses as the key to their own success."

Dennis Conroy, a partner with Coopers & Lybrand in New York, agrees. "Fifteen years ago, a telecom manager would have been happy to tell you what percentage of revenue was being spent on what," he says. "It was simply a cost element of the business. What he was doing and the kinds of services he had available were mostly the same as everybody else's. Now, managers are investing in different ways to apply the technology. How you use it and how you spend your money could cause your competition to stand up and take notice."

Communications as strategy

Has communications become the "competitive necessity" that analysts portray? Two-thirds of the survey respondents describe their management's view of communications as an asset or an advantage, but few offer a descriptive definition of how it actually helps their company. The two most frequently mentioned descriptions are of communications as a way to stay close to those served by the company and as a way to keep overall costs down.

"Telecom is a very important competitive advantage. It really helps us service our customers, and top management appreciates this," says the director of information services for a large health care provider who requested anonymity. (Several of the users interviewed asked that their names not accompany their comments in this article.)

"It's definitely more than a

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While the bottom line is still king, communications has become business's ace in the hole.

ILLUSTRATION ©1988 WARREN GEBERT

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cost of doing business. In banking, our network is our business," says Michael Spillane, manager of network control for First Wisconsin National Bank of Milwaukee.

Alan Moulton, manager of planning and research for Liberty Mutual Insurance Co. of Boston, expresses the most widely held view. "Management is coming around to more of an asset-based viewpoint," he says. "We, along with most other companies right now, are looking for that advantage out there with the customers. The only way to get close to the customer is through communications."

James Winsness, manager of sourcing systems for General Electric Co.'s turbine business operation in Schenectady, N.Y., agrees that corporate management is beginning to take the longer term view of communications. "There is a reemphasis on strategic planning for data communications as opposed to just a reaction to conditions," he says.

Such long-term, strategic integration of communications into the business plan was not popular among those users who view communications as an asset or a strategic weapon. More than half of these defined the "strategic" position of communications in their firms as little more than a way to reduce corporate operating costs. Most of the firms that Computer Task Group's Vandervoort deals with, for example, claim to view communications as "important strategic components, however, mainly as a cost-reduction mechanism rather than a means to increase revenue."

GE's Winsness believes corporate management is beginning to take the longer term view of communications.

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Such a view is but one step above that expressed by the other third of those interviewed, who view communications simply as an expense.

Harvey Goldstein, communications manager for the City of New York Sanitation Department, says flatly, "It's a cost of doing business."

The telecommunications director for a large life insurance company says different levels of his company's management hold different opinions. "Within information services, we see [communications] as a strategic weapon," he explains. "Above that, in nontechnical upper management, it's viewed as a cost."

A major reason for such a viewpoint is perhaps best expressed by a communications manager for a national retailer. "Our management sees it as a cost of doing business," he says. "That's our fault for not selling it properly."

Budgets grow slowly

As reported by *Network World*'s Panel of Communications Users, 1989 budgets are up an average of 5% over 1988 budgets. This is slightly less than 1988's average increase of 6% over 1987 budgets. Coopers & Lybrand's Conroy says this moderate increase reflects a trend he's noticed in communications budgeting. "Generally speaking, budgets are increasing," he explains, "but more modestly than they have in the past five or six years."

Van Wolvelaere of Arthur Andersen believes that, overall, budgets are increasing. "People outside of the traditional telecom function areas — director of sales, director of marketing — are now starting to talk about their need for communications outside of the normal bounds of, say, the MIS department," he says. "There's a lot of downward pressure on the MIS people to 'jack it up' a bit to service these requirements. As a result, specific budget requirements are coming in for networks."

"Our management sees communications as a cost of doing business," says one manager.

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The biggest communications budget reported was $145 million for a company with $15 billion in annual revenue; the smallest was $4,000 for a $4 million company.

Increases were based mainly on the slowly increasing costs of doing business, but companies that view communications as a strategic asset are choosing to invest more heavily than others. First American Corp. in Nashville is one of these companies. Telecommunications Manager Hank Rotter says, "Our budget is going up because it is a corporate objective to build our own telecommunications network."

Average expenditures for 1989 stood at nearly .5% of corporate revenue, up from .32% in 1988 (see Figure 1 on page 34). Increases enjoyed an almost 4-to-1 advantage over decreases.

Does this mean that it's getting easier to draw from the corporate piggy bank? Not for most managers.

"It's still business as usual," says the

telecommunications manager for a Northeastern retail store chain. "There's still a whole lot of cost-justification that has to go on with network expenditures. We have to watch those closely."

Dick Redmond, communications officer with Bank One, Columbus, N.A. in Columbus, Ohio, concurs. "It's strictly a business case," he says. "Budgeting always has been a matter of justification for us."

First Wisconsin's Spillane says budget approval is "a little easier in that management is more in tune with our network. However, in approving funds, it must be decided what the payback is for a certain purchase. And this has never changed."

Moulton of Liberty Mutual says the process is easier at some levels than at others. "I'm not sure the budget people see [communications] as a strategic asset," he explains. "It's easier in the initial stages to get your own management approval than in the budgeting process. Same old story."

Van Wolvelaere thinks that will change. "One interesting thing I've noticed over the last 12 to 16 months is a tendency away from the pure cost analysis or cost/benefit break-even analysis and factoring in more of the intangible benefits," he says. "People are asking themselves, 'Can we make ourselves more competitive?' They're not just saying, 'OK, we're spending some $10,000 a month on dial-up calls, and if we install this line, it's $9,000 a month, so therefore we'll do it.' People are backing away a little bit and tipping the scales a bit more toward the intangible benefits."

> "There's still a whole lot of cost-justification that has to go on with network expenditures."
>
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Of course, the news isn't all good. Winsness of GE says his budget will drop about 8% from last year; his data services budget will be down 50%.

Outside influences such as organizational revenues still dictate much of budgeting policy. "It's next to impossible to get more money because of budget restraints," says Goldstein of the New York Sanitation Department. "Projected revenues are falling short of actual income."

Voice down, data up

Lines are blurring between voice and data, especially in terms of carrier services. Few managers were able to delineate separate voice and data services categories.

"It's getting harder and harder to break out voice and data as separate items in communications budgets," says Mark Leary, director of communications market research for International Data Corp. in Framingham, Mass.

"It's often difficult to separate voice from data expenditures," agrees Thomas Vasaro, manager of network services for Rosemount, Inc., a process instruments manufacturer in Eden Prairie, Minn. "Both voice and data are digital, and both use long-distance carriers."

Those who were able to separate the two confirmed a trend identified in last year's survey: Voice expenditures are declining while data spending is rising (see Figure 2, page 34).

Athough it is changing slowly, the proportion of resources invested continues to be approximately two-thirds for voice and one-third for data. Average voice expenditures are down from 63.7% of the communications budget to 62.6%; data expenditures are up from 36.3% to 37.4%. The average investment in voice equipment declined a small amount, from 11% of the budget in 1988 to about 10.8% in 1989. Data equipment investments grew from an average of 11% in 1988 to 11.8% for 1989, a significant growth in industrywide dollars but shy of 1987's 12% of budget (see Figure 3, page 34).

> "The amount spent for data communications is growing more rapidly than some of the voice-related costs."
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"The amount spent for data communications and data connections is growing more rapidly than some of the voice-related costs," says Conroy of Coopers & Lybrand. "There are just more data appliances popping up all over the place — PCs and the like."

However, this doesn't mean that the voice side of the house is any less efficient, he adds. "On the voice side, there are more tools available for telecommunications managers to manage costs. So, while voice applications continue to grow, the relative associated costs aren't growing as rapidly as they have in the past," Conroy says.

In addition, most major voice equipment is already in place. Few companies are spending large sums on handsets, private branch exchanges and other major voice investments. The PBX market has

(continued on page 34)

(continued from page 33)

leveled off, according to industry observers. Many companies are leasing equipment, which usually requires no down payment and no lump-sum payments that would boost budget figures.

"Most of our PBXs are leased at this point, as are some modems," Liberty Mutual's Moulton says. "We have no plans to directly increase leasing, but it's an option for anything we consider obtaining."

Another reason why voice is losing and data seems to be gaining is the blending of voice and data services from major carriers. "Once you go digital, it doesn't matter what you send over the lines," says a communications engineer for a midwestern utility.

With such small increases in equipment expenditures and the ever-growing need for more communications capability, are communications departments being choked by tightened purse strings on equipment outlays?

As a rule, no. Instead, they're getting more for their dollars than ever before. "Networking equipment is becoming more expensive but doing far more than it ever did before," says Bank One's Richmond. "The net effect is more intelligence in the network for about the same dollar."

The director of information services for a large health care systems provider says that improving price/performance ratios as well as effective department management are vital to keeping costs in line. "If you are managing your operation efficiently, you should be relatively flat in terms of expenditures," he says. "For the same price, however, you get much greater performance."

From equipment to support

Some of the money that went into equipment and services in '88 is going into maintenance and support in '89. Rather than buying new equipment, many companies are trying to make what they already have work better or longer. "Our maintenance costs will increase due to aging equipment," Goldstein says.

There's a dichotomy in maintenance spending this year. While overall spending for maintenance is up from last year, the actual number of respondents using third-party service and support has dwindled. The increases are mostly going to in-house support. Increasing charges from maintenance firms have caused many companies to drop outside-vendor or third-party maintenance and do it themselves.

The most commonly cited reason for the higher charges is a lack of competition in the maintenance marketplace.

"Such costs are rising generally because of fewer firms in the maintenance business," Goldstein says. "It's getting less competitive."

GE's Winsness says that money can be saved in maintenance. "The costs of hardware maintenance are declining rapidly due to increased reliability of components and diagnostics," he says. "Self-maintenance alone has driven our costs down 20% from three to four years ago."

Jan Whitted, telecommunications manager for Tufts University in Medford, Mass., agrees that doing it yourself is the way to go. "We are moving away from relying on vendor personnel and turning to our in-house staff for maintenance and installation," she says.

Staff moves up

More in-house responsibility for maintenance and support is a big reason for the increase reported in staff sizes and budgets. Personnel budgets are increasing, whether for adding staff, raising pay for existing staff or training and education. Average staff size increased from 27 last year to almost 30 this year; about half of those surveyed said they plan to add at least one full-time employee next year.

Why? The money spent on hiring and training is still less than most departments pay for outside maintenance. And as data and digital services grow in importance, companies need more and better-trained personnel.

Whitted says Tufts' plan is a prime example. "Our stress now is on managing our facilities and maintaining them ourselves, so we're investing a lot in equipment and people."

Computer Task Group's Vandervoort says that increasing expenditures signal a trend toward viewing the staff as a resource to be cultivated. "Perhaps the greatest shift in budget allocations we see is in training and education," he says. "Corporations seem to be nearly doubling the budget for education in '89 over the '88 expenditures. I think [the companies] are all realizing that [the staff] needs education on the emerging technologies if [the companies] are going to make effective use of them."

Other cost trends

In addition to the general upward trend in equipment and staff budgets, respondents offered other reasons for budget increases. Rising carrier costs, especially for leased-line analog services, topped the list.

First Wisconsin's Spillane says that analog costs are one of his biggest expenses. "Increasing costs for analog facilities is the big trend here," he explains. "Currently, analog costs are about 60% of our budget; the five-year trend looks like analog may become as much as 65%."

Many of the users agree that private-line costs are rising the most rapidly. One says his superiors are concerned about the rising costs of dedicated analog data circuits more than anything else.

However, Spillane and Moulton agree that, while analog costs are rising, high-speed digital costs are going down.

Lack of service from local and long-distance carriers are pet peeves of most users interviewed. "As companies like MCI grow, they start to do what AT&T did: drop off in their service orientation," says the international retailer's communications manager. "Large carriers will tailor their services to your needs, but only when forced to."

Gaylord Ellerman, systems design supervisor for Hicks & Ragland Engineering Co., Inc. of Lubbock, Texas, says the long-haul market is starting to level off. "AT&T is coming down as MCI and Sprint are going up. The low-cost alternatives are becoming closer to the high-cost alternatives."

The increased use of basic communications is a big reason why the budget for NEBS, a business forms manufacturer in Groton, Mass., increased this year. Nancy Cooper, telecommunications manager for NEBS, says, "Usage costs on a per-call basis are decreasing, while total usage is increasing. Data costs are decreasing as we install T-1."

New technology

As in past years, expenditures on research and development of new technologies were the smallest single budget segment. So few companies — including most of those listing communications as a strategic asset — budget for new technologies that the average allocation was less than 1% of the total budget.

Most of those companies investing in new technologies weren't actually buying anything new to the market. T-1 and very small aperture terminal satellite transmission led the list of technologies to be tried in '89. However, the firms investing in these technologies were generally pleased with upper management's willingness to try new things.

The telecommunications manager for a Northeastern retail chain says his firm "is becoming more willing to examine new technologies. We're looking at VSAT, which is very high-tech for us. There is a new willingness to play down the risk side a little bit and consider how such technologies might help the company."

Ed Scriven, telecommunications manager for Poudre Valley Hospital in Fort Collins, Colo., says his department will be "experimenting with Motorola radios with telephone interfaces" to improve ambulance response time and service. The hospital is also investing in T-1 next year.

Analysts and consultants offered similar reasons for the lack of experimentation. Computer Task Group's Vandervoort says that most companies are spending their time and money pulling together the scattered islands of communications that exist in their organization.

"Consolidation will continue to be an important trend, with an emphasis on cost reduction," he says. "Any experimentation or development funding will almost certainly go toward exploring and building systems to integrate all the junk that they now have."

Van Wolvelaere of Arthur Andersen concurs. "I view this as more of a consolidation period from a corporate standpoint, not so much 'Let's go out and try [Integrated Services Digital Network],' " he says.

"Users are saying, 'Look, I've got five networks, and I'm transmitting bits of information on each of those five; how can we consolidate that? And how can we expand it out to our tertiary offices?' "

What's next

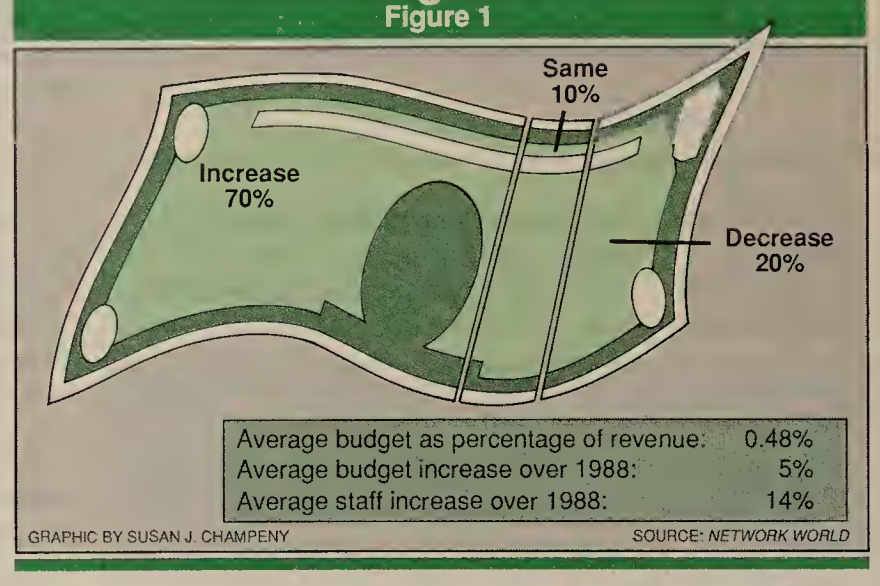
What technologies will be tried next? Most respondents list video as one of their "pet projects." In addition, industrywide electronic data interchange and other methods of resource-sharing among business partners should find places in next year's budgets, Vandervoort says.

Experimentation and development of new applications will increase, according to Coopers & Lybrand's Conroy, especially in firms seeking more strategic advantages. He and Computer Task Group's Vandervoort share the idea that, as in poker, players shouldn't stand still too long; someone could be dealing himself a new and better hand.

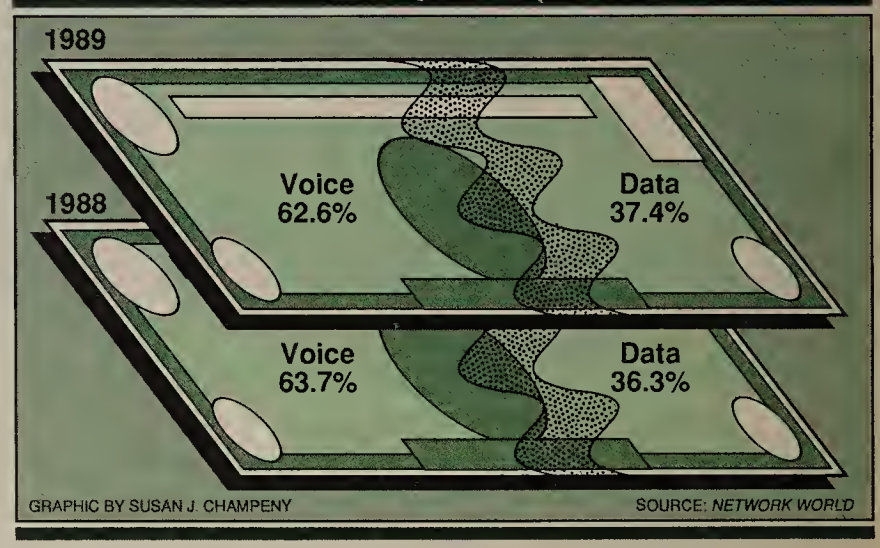
"Firms are looking at ways to derive greater leverage from networking," Vandervoort says, "but all share concerns over the longevity of competitive advantages gained through technology. They generally don't believe the advantages last too long."

"It's not easy to sustain that advantage," Conroy concludes. "In fact, it's impossible to do if you just stand pat."

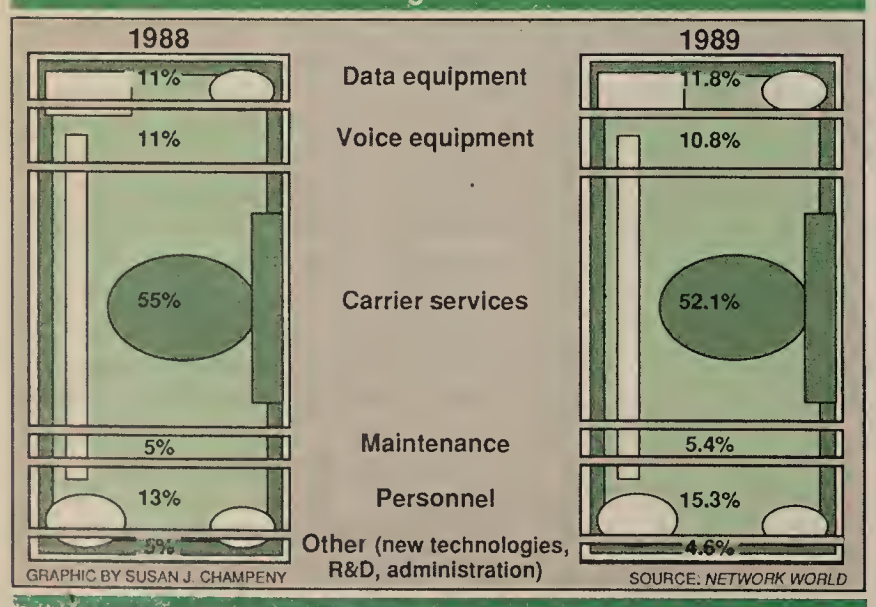
Users' budgets for 1989
Figure 1



Voice and data: blurring boundaries
Figure 2



Where the dollars go
Figure 3



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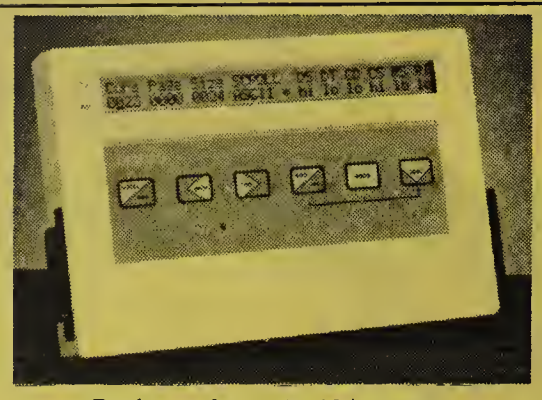

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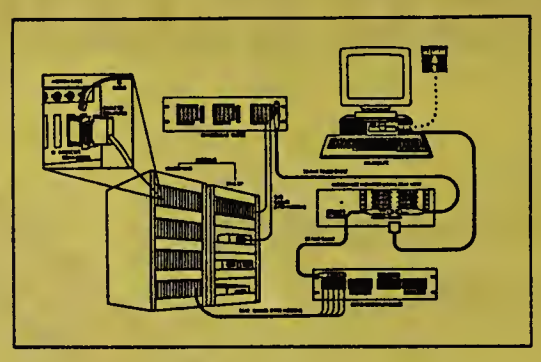

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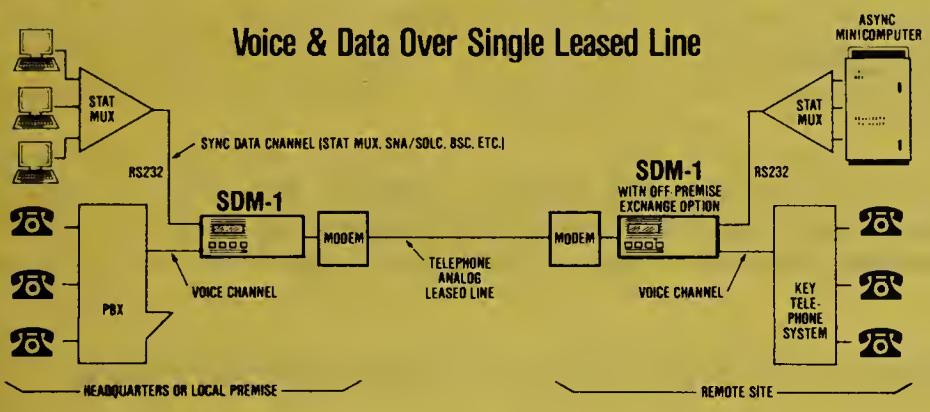

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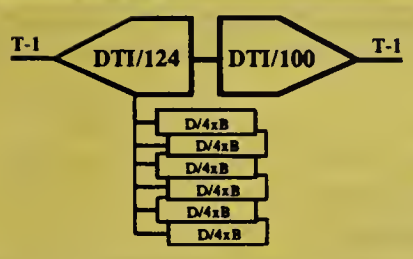

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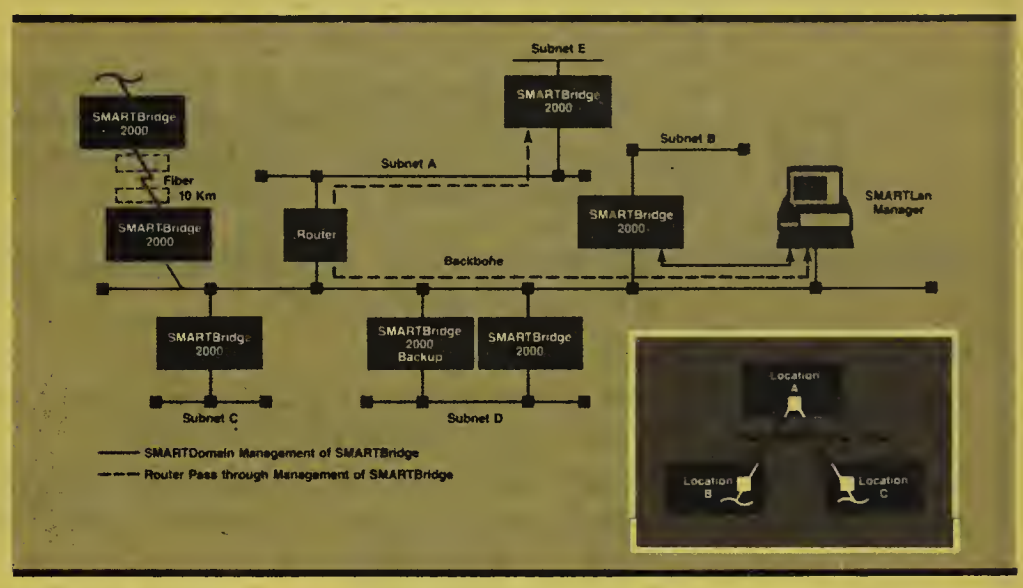

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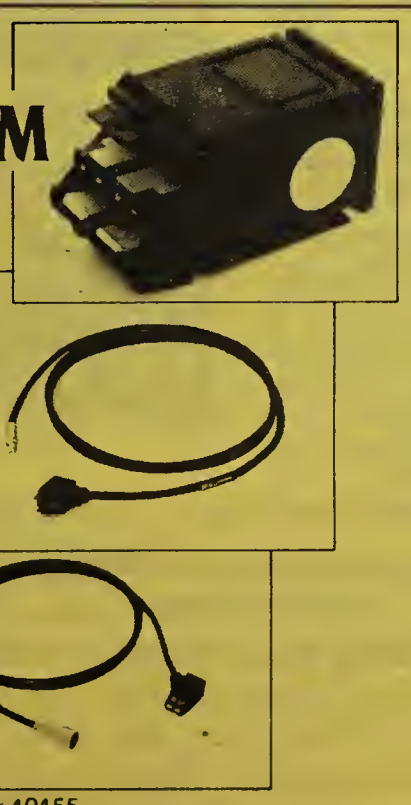

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SELLER: John S. Pereira, as Chapter 7 Trustee of Argo Communications., Debtor.

FOR FURTHER INFORMATION CONTACT: A. Peter Lubitz, Esq., Reavis & McGrath, attorneys for Trustee, 345 Park Avenue, New York, New York 10154; (212) 486-9500 or John Pereira, Trustee, 150 E. 52nd Street, New York, New York 10022; (212) 758-5777.

New York, New York

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continued from page 30

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Is Ungermann-Bass oriented mostly toward large customers?

Our focus has been almost exclusively on large organizations. We build big networks. And that's what really distinguishes us from everybody, including IBM. We've always focused on a few big networks.

However, we're now focusing on alternate channels of distribution. Not through Businessland [Inc.] and other retail channels but through other partners such as Mitsubishi [Corp.] or British Telecom.

What is Ungermann-Bass' presence internationally? Do you target the same markets overseas?

Pretty much exactly the same markets. About 50% of our revenue comes from international sales. A lot of that is from Japan, where we have a very strong presence. We have a strong presence in the UK, Scandinavia, the Benelux countries [Belgium, the Netherlands and Luxembourg], and Germany and France. The industrialized nations are pretty much the ones we're focused on.

Our strongest regions — outside North America — are Japan, the UK and Scandinavia.

Has Ungermann-Bass been consistently profitable over the years?

For the first six years, we grew at a very rapid rate; we probably set record profits every quarter for six years. This was precisely according to plan. For the first six years, I'd say we hit our plan within a few [percentage points] every quarter.

Beginning in 1985, our growth rate slowed down. We still remained profitable, except for a negative quarter in mid-'86. Over the last four years, our revenue growth has stayed at about a 35% rate [for the four-year period]. We expect it to grow around 35% to 40% for the next four or five years.

What caused the negative quarter?

During [the past four years], we formed a joint venture with GE in the factory networking area. Initially, that turned out to be extremely successful. We had some real problems in absorbing that company back in when the MAP standard changed. Customers just quit buying the stuff. We had the market pulled out from under us. We merged that company back into Ungermann-Bass.

So far, this quarter is [showing] the strongest growth we've ever had for the first part of a year.

Record profits, record revenues, record bookings this quarter. But we don't break them out separately because Tandem doesn't break out its business units. That's one of the nice things about not being a public company: We don't have to give all of our information to our competitors.

What are some of the key changes you've seen in the industry?

When we started our business, we basically built our networks around the concept of taking network cable and snaking it through your building, then putting in a box every so often that would hook up your devices — your terminals, your workstations and whatnot. But we found that was not a very manageable solution.

And in those days, there was a huge war between the LAN people and the PBX people. We were saying 'Use cable,' and they were saying 'Use telephone wire.' Turned out they were right. Telephone wire was exactly the right solution, and it's now sweeping the industry worldwide.

It's one set of wire you can use to hook up almost anything — onetime wiring for your building that will last for five or 10 years. And by bringing it back to a common point, you can do much better network management.

So now we locate our equipment in a wiring closet, where we can manage it a lot better. That's a whole brand-new architecture for local-area networks, and now every company — IBM, DEC, everybody — will have to adopt that strategy because customers now see the benefit of that wiring.

How can you judge Ungermann-Bass' success?

In this valley, you tend to compare yourself with Sun [Microsystems, Inc.] and Apple. But we are building a systems business, and you don't do that at 100% growth per year. You just can't do it. Nobody's ever done it.

Building an end-user systems business is a very difficult thing to do. Once you've done it, though, it's hard to stop.

University installs broadband network

continued from page 19

and an IBM 9370. VistaLAN/1 also supports microcomputers and is interfaced to Local Intercampus North Carolina Network (LINCNET), a network connecting 16 University of North Carolina institutions statewide, and Bitnet, a worldwide network that universities use for electronic mail and file transfer.

Each host device runs on its own assigned frequency. However, Culver said, "The user doesn't have to worry where on the broadband a particular product runs." Instead, LAN/1 Network Interface Units (NIU) find a data path to whatever device the user requests.

NIUs are the heart of the VistaLAN/1 network. The microprocessor-based interface devices include a radio frequency (RF) modem and support for up to 32 asynchronous ports. They provide virtual circuits to any device the end user wants to access, Culver said.

Up to 250 NIUs can share 6 MHz of bandwidth on the broadband cable, enabling VistaLAN/1 to operate on a single 6-MHz channel pair.

Culver said Appalachian State plans to add an additional 50 to 60 NIUs, which should allow it to link the entire faculty and administration to VistaLAN/1. Even then, it will not be necessary to bridge to another 6-MHz channel, although products are available to accomplish that, he said.

In addition to VistaLAN/1, the broadband cable is used to support four departmental Ethernets. Each Ethernet is linked through a baseband-to-broadband modem from ChipCom Corp., Culver said. Over the next few years, another 20 to 30 departmental Ethernets will be added to the ChipCom backbone.

Users on the Ethernets can access LAN/1 through a DECserver 200 Terminal Server. The ports on the server are wired directly to ports on an NIU attached to LAN/1. To bridge from Ethernet to LAN/1, or the reverse, a user calls the NIU attached to the server, Culver said.

For administrative word processing, Appalachian State installed a third network, an Allen-Bradley VistaLAN/PC broadband network. That net links 40 campuswide personal computers to two file servers running Novell, Inc.'s NetWare and Ashton-Tate Corp.'s MultiMate or dBase III software.

Culver said the school has not yet been able to justify installing ports in each dormitory room because the RF modems are too expensive. Instead, the school has 24 2,400 bit/sec dial-up modems, each supporting Class 5 of the Microcom Network Protocol for error protection, that students can use to dial into LAN/1.

For students who do not own a personal computer, the school provides six public service labs, each with about 16 personal computers. The labs are wired directly to LAN/1.

Video, too

In addition to data, the cable network also supports 30 cable television channels as the result of an agreement Appalachian State negotiated with the town of Boone's CATV provider for a direct TV feed. The school uses another five channels for internal productions and to show movies or instructional videotapes requested by the faculty.

Since each classroom is wired with broadband, instructors can show films in class by simply requesting the movie to be broadcast on the appropriate channel. Or teachers can request a film be played in the evening for students to watch in their dorms.

The university is negotiating with Boone's CATV provider for a channel that can be seen citywide, giving students who live off-campus access to video. In addition, that channel could be used to provide the community with an informational channel produced at the university, Culver said.

Video is also used to conduct statewide teleconferencing, he said.

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NETWORKWORLD

NETWORK MANAGEMENT IN THE MULTI-VENDOR ENVIRONMENT

Moderator: **Bruce Hoard, *NetworkWorld***
Dan Richards • Howard Frank • David Edison
James Herman • William Gilbert • Peter Hicks

January 20, 1989
11:30am–4:00pm, EST

● Audience

This seminar is designed for all technical managers, engineers and technical staff responsible for corporate telecommunications and data communications, whether it be in the MIS or communications departments.

● Benefits

Can you answer these questions?

- What are the different kinds of network management?
- How big a network must you have to employ network management?
- How effective are modems as network managment tools?
- Does IBM control the market and dictate network management standards with Netview and Netview PC?
- Does the International Standards Organization Open Systems Interconnect (OSI) model offer an alternative to Netview and Netview PC?
- How do users view AT&T's Universal Network Management Architecture (UNMA)?
- How many third-party network management companies exist and what kind of products do they offer?
- How much network management capability is built into the various long-haul carrier services?
- How can you cost justify network managment purchases?
- What's the difference between performance measurement and diagnostics?
- What is the Network Management Forum?

● Purpose

The purpose of this seminar is to familiarize participants with both basic and advanced elements of network management hardware, software and services. It is further the purpose to show, through actual user experiences, how network management tools can create more cost efficient networks.

Network management for both large and small networks will be addressed. The role of modems in multi-drop networks will be discussed along with the network management capabilities of T-1 multiplexers.

Products and services from both large and small vendors will also be discussed, as the panel attempts to cover the widest possible spectrum of offerings.

Issues of interest will vary widely. This seminar will be of equal value to data oriented computer system departments and voice oriented telecommunications departments.

Dan Richards

Dan Richards is IBM's manager of network management products, including Netview and Netview PC. Since starting at IBM in 1959, he has held a variety of positions, including senior system engineer, network control products development and test manager and network control products product manager.

Howard Frank

Howard Frank is chairman of Network Management, Inc. Past president and CEO of Contel Information Systems, he has served as visiting consultant in charge of network analysis for the Executive Office of the President of the United States.

David Edison

David Edison is executive vice president of Corporate Information and Communications Systems, Westinghouse Electric Corp. He has responsibility for planning and operating the corporate telecommunications network, a $60 million enterprise. He started at Westinghouse in 1963.

James Herman

James Herman is president of Future Network Consulting. In over 14 years of computer and communication system experience, he has managed some of the world's most complex networks, including the ARPANET, the Defense Data Network and the DARPA internet.

William Gilbert

William Gilbert is responsible for planning AT&T's Integrated Network Management program. He works closely with Universal Network Management Architecture and the Network Management Protocol, AT&T's Open Systems Interconnect network management protocols.

Peter Hicks

Peter Hicks is senior director, Network Design, Planning and Implementation with Sears Communications Network, Inc. He has 18 years of experience in the telecommunications industry. He was manager of Network Systems for Standard Oil of Indiana from 1980 to 1985.

Syllabus

IBM

- IBM Strengths and Weaknesses of Netview and Netview PC
- Network Management for OS/2 Users Netview versus OSI Network Management
- Netview versus AT&T and DEC Network Management within SAA Alliance with PacTel Spectrum

Digital Equipment Corporation

- Enterprise Management Architecture (EMA)
- EMA Compatibility with OSI Configuration Management Information Protocol (CMIP)
- Third Party Vendors under EMA Umbrella

AT&T

- Strengths and Weaknesses of UNMA
- Monitoring 400 PBXs Simultaneously with Accumaster

Hewlett Packard

- OpenView

Modem-Based Network Management

- The Necessity to Differentiate Commodity Products
- Proprietary versus Open Systems
  - — Racal Milgo Codex
  - — Atlantic Research
  - — AT&T Case Digilog
  - — Dynatech Infinet Paradyne
  - — General DataComm

T-1 Multiplexer Network Management

- Timeplex
- Network Equipment Technologies
- Stratacom

Private Packet Switching Network Management

- BBN Telenet Memotec

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Users, carriers christen fiber cable

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broadband communications, such as videoconferencing and real-time data base applications, since response is instantaneous, according to John Berndt, senior vice-president of AT&T.

Such services are difficult to provide effectively on satellites because of the inherent response delays, he said.

The cable cost $361 million to install, which was divided proportionately among 30 owners in Europe and the U.S. AT&T owns 34% of the cable, British Telecom owns 15.5% and France Telecom owns 9.8%. Other domestic investors include MCI International, Inc., Hawaiian Telephone Co., ITT World Communications, Inc., RCA Global Communications, Inc., The Western Union Telegraph Co. and TRT Telecommunications Corp.

Rate reductions

Only one of the major partners, France Telecom, announced rate reductions for existing international services that will now run over TAT-8. Costs for French users will be about 2½ times less expensive for voice and 10 times less expensive for data, said Jean Grenier, director of industrial and international affairs at France Telecom.

Rod Brain, director of the worldwide telecommunications group of American Express, said his primary reasons for choosing TAT-8 are diversity of routing and the technical superiority of fiber. American Express will use the cable for both voice and data services.

British Airways representative Bryan Wilson said TAT-8 will support his firm's interactive reservations and customer service systems. The airline serves about one million customers in the U.S. each year, and all of the reservations are handled through 1,900 terminals linked to the UK through five gateways in North America.

Before TAT-8, international communications services were either carried by satellite or copper undersea cables.

The fiber-optic technology of TAT-8 will let British Airways improve the response time, currently two seconds, between its computer centers in the UK and its remote terminals in the U.S., Wilson said.

Ron Myers, vice-president and manager of the global network group of Bankers Trust Co. in New York, said he has placed an order for service on TAT-8 with one of the U.S. TAT-8 service providers. He declined to name the carrier. The company will purchase a 512K bit/sec private line for voice and data.

"The big attraction [of TAT-8] is an all-digital pathway from our location in the U.S. to our location in London," Myers said. The fiber technology will be more reliable than satellite services, which can be adversely affected by bad weather.

Novell takes $40m write-down

NEW YORK — Central to Novell, Inc.'s 1989 business strategy is an accelerated effort to phase out its hardware products and concentrate solely on software, which delivers higher profit margins.

As a result of its stepped-up software push and its exit from the hardware market, Novell said recently that it will take a $40 million write-down during its fourth quarter to clear the remaining hardware from its books.

Most of the inventory consists of terminals and file servers. Novell will still sell network interfaces.

Novell President and Chief Executive Officer Ray Noorda would not say what impact the write-down will have on quarterly earnings. By taking the charge against earnings, Novell minimizes the effect on its financial performance next year.

This week, the company will announce results from the fourth quarter, which ended Oct. 29.

"The reason we've taken the write-down now instead of on a quarter-by-quarter basis over the next year is to devote all of our attention to software products," Noorda said. "We've had a very good quarter otherwise. Excluding the inventory write-down, our operating results showed strong growth in the percentage of software products vs. hardware products."

More than 60% of Novell's sales in 1988 came from software products, Noorda said.

"As we shift out of the hardware business, we expect our margins to improve significantly," he added.

Software products, mostly the NetWare operating system, represented 65% of Novell's fourth-quarter revenue.

To help grow revenue, Novell is counting on sales of its NetWare for Macintosh (for the Apple Computer, Inc. Macintosh) and NetWare for VMS (for the Digital Equipment Corp. VAX market), both of which began shipping last week.

— Laura DiDio

Users to figure out what's slowing ISDN

continued from page 2

tion. One problem is inconsistency in the way the Bell operating companies plan to package ISDN services. Felts said multinational companies will find it difficult to implement a nationwide ISDN network when each BOC supports different services, pricing schemes and interface requirements.

The other problem causing delays is the lack of compatibility of ISDN equipment from multiple vendors. Felts said detailed specifications need to be written to ensure that users can transfer equipment from one ISDN-compatible switch to another.

Felts expressed optimism when questioned about the adequacy of local loops for ISDN. He said the technical problems encountered in this area thus far have been easy to resolve and should not disrupt ISDN implementation.

But line problems have hampered at least one user.

Karen McCarty, manager of operations and administration of telecommunications systems at Massachusetts Institute of Technology in Cambridge, Mass., discussed problems with the university's ISDN network project. She recently helped oversee the installation of an AT&T 5ESS central office switch that supports about 13,000 lines, 4,600 of which support ISDN terminal equipment.

This summer, AT&T — which performed the installation — discovered that the distance between some buildings on the campus exceeded the limitations for digital circuits. AT&T had to reequip the 5ESS switch with new circuit cards to drive the digital signals across the campus.

Since then, digital phone sets at MIT periodically "fall asleep" for minutes at a time, McCarty said. She suspects the source of the problem is not in the switch or the terminals but in the wiring between the central office switch and user stations.

McCarty said difficulties are to be expected in any large installation, but the complexity of ISDN technology makes it more vulnerable to problems.

"Most vendors are not prepared to do installations of this magnitude," she said.

McCarty said the challenges in supporting existing applications in ISDN-based networks stem from the newness of the technology. "It is difficult to run an application that depends upon a technology that is still under development," she said.

Conquering the home market

Panelists generally agreed that ISDN will gradually become available to small businesses and residences. Currently, most ISDN installations involve major companies supported by an isolated ISDN-ready central office switch.

Martin Johanson, senior director of Business Products at Ameritech Services, Inc. in Chicago, said his company plans to switch large customers to digital technology and then slowly introduce them to ISDN services.

Johanson said that as BOCs make ISDN available to all their customers, entrepreneurs will develop new ISDN applications that will heighten public interest and accelerate the implementation of ISDN.

"ISDN will be the future network of America," he said.

IBM/Siemens deal leaves users worried

continued from page 6

himself lucky that he is not in the market for new switches.

"Choosing from all those different switches is going to be confusing," he said. "It's going to be like walking down a street in New York City and having a guy come up to you, spread open his coat and ask you if you want to buy a watch. How would you know which one to pick?"

The user said he would hesitate before buying a Rolm 9750 switch because Siemens may decide to replace the Rolm PBX with the Hicom switch it currently sells in Europe.

At least one Rolm user is pleased that Siemens will take over the Rolm product line. Lise Stanford, director of telecommunications for the First Tennessee Bank, N.A. in Memphis, Tenn., said her company maintains its own network equipment and deals mainly with third-party distributors for add-ons.

"I think this agreement is an enhancement if it is true that R&D will continue to be focused on Rolm products and that Siemens won't force its products on Rolm users," she said.

Advantages on both sides

Rolm should be able to help Siemens build better customer premises equipment, Stanford said. As a trade-off, Siemens will provide better integration with central office switches and provide the Rolm organization with much-needed stability, she said.

Rolm user Jay Silverberg, branch controller for First Data Resources, Inc. in Lake Success, N.Y., said he hopes the agreement does not mean IBM will turn Rolm over to Siemens completely.

"Manufacturing is pretty much invisible to the user anyway," Silverberg said. "But you have to wonder if they might give up completely on marketing too."

Silverberg said that while he would probably buy a 9750 if his company needed another switch, he would be concerned that the switch might be pulled out of the market.

For Rolm users not in the market for a new switch, it will probably be business as usual, Silverberg said.

Novell tool links to OS/2 nets

continued from page 1

link NetWare and OS/2 networks, according to Davis.

The introduction of NetWare RPC is part of a much broader 1989 product and marketing strategy outlined by Novell President and Chief Executive Officer Ray Noorda at the same press conference.

Noorda also previewed the company's 1988 financial results, which will be released this week.

New products users can expect from Novell in 1989 include:

- NetWare server support for both the Sun Microsystems, Inc. Network File System (NFS) and IBM Server Message Block (SMB) network operating system protocols. Support for NFS and SMB, which are de facto industry standards, is a must for Novell in order to broaden NetWare's appeal.
- A new generation of NetWare server software for use on Intel Corp. 80386-based machines. This includes an 80386 product that will give NetWare users three times the performance of current 80286-based NetWare servers, increased disk storage capacity and the ability to support more users per server. Although Novell is getting out of the hardware business, it still wants a say in the design of products that will run its software.
- Two new ways of supporting the Unix operating system. First, Novell will support Unix workstations using Sun's NFS as the network protocol. The second method of Unix support will be a new version of NetWare that will run under Unix. This will be similar to NetWare for VMS.
- NetWare currently supports MS-DOS, OS/2 and Apple Computer, Inc. Macintosh operating systems as workstations. Unix support will broaden the scope of NetWare's connectivity to large corporate and engineering users.
- NetWare support for multiple interfaces, including Named Pipes and IBM's Advanced Program-to-Program Communications. Support for those APIs will be available in the first quarter of 1989. The programming interfaces are required to develop distributed applications that will run in heterogeneous network environments.

For related story, see page 41.

NetWare RPC, which begins shipping in the first quarter of next year, will cut months out of application development cycles, according to Nancy Woodward, vice-president and general manager of Novell's Development Products Division.

The product will be used by developers to create general-purpose financial, office automation and accounting applications, she said.

NetWare RPC simplifies software development by making it possible for programmers to build interprocess communications capabilities into their products simply by using the offering's compiler.

NetWare RPC consists of two components: the RPC software compiler and the Network Library. The RPC Compiler enables software developers to create applications that can be executed at multiple remote sites. It also generates code to convert data types between incompatible machine formats.

The Network Library component of NetWare RPC provides the application with a complete interface to the API that the developer is using.

"The library portion of the software actually maps the communications functions to a specific [interprocess communications] syntax," Woodward said. "It lets the developers generate distributed applications that are independent of the underlying network protocols."

The RPC network code can be created in MS-DOS, OS/2 and VMS environments. Developers can port an application to other network protocols such as Network Basic I/O System, Named Pipes and Transmission Control Protocol/Internet Protocol.

The DOS version of NetWare RPC has a list price of $950, while the multitasking OS/2 version costs $1,750.

According to Woodward, Novell will announce the availability of NetWare RPC for the VAX VMS market in the first quarter of 1989.

FCC releases terms of deal

continued from page 3

AT&T incorrectly alleged in FCC filings that MCI would pay Holiday a cash bonus of $1,500 to $3,000 for every franchise that signed up for service and would reimburse Holiday for installation expenses in excess of $150 per location. These items were not stipulated in the contract data released by the FCC.

The Tariff 15 dispute centers largely on a provision of the Communications Act of 1934 that requires carriers to offer services to customers at the same rates. The FCC has already given carriers some flexibility by allowing them to offer volume discounts, but carriers must show that such rates are not discriminatory.

MCI claims that its volume-discount arrangements, such as the one for Holiday, are not discriminatory because they are available to all users that can meet the contract criteria. Although MCI is not required to file tariffs, it can voluntarily file such documents. MCI's deal for Holiday references one of MCI's tariffs, but includes a set of terms and conditions that are not part of the tariff and not publicly available.

That aspect of MCI's offer prompted some attorneys to question whether MCI's deals are truly generally available.

"It's sort of ridiculous to have a 'generally available' unpublished offer," said one attorney who requested anonymity.

Calendar

Jan. 12-13, Columbus, Ohio — Understanding Data Communications. Contact: Data-Tech Institute, Lakeview Plaza, P.O. Box 2429, Clifton, N.J. 07015; (201) 478-5400.

Jan. 15-18, Honolulu — Pacific Telecommunications Connectivity: Users, Networks and Information Services. Contact: PTC '89, Pacific Telecommunications Council, 1110 University Ave., Honolulu, Hawaii 96826.

Jan. 17-20, San Diego — Local Area Networks: Implementation & Configuration. Contact: Integrated Computer Systems, 8000 Towers Crescent Drive, Vienna, Va. 22180; (800) 421-8166.

Jan. 18-19, Atlanta — Making Incoming Call Centers Pay Off. Contact: *Business Communications Review,* 950 York Road, Hinsdale, Ill. 60521.

Jan. 18-21, Palm Springs, Calif. — National Association of Telecommunications Dealers 1989 Winter Conference. Contact: National Association of Telecommunications Dealers, 1255 23rd St. N.W., Washington, D.C. 20037.

Jan. 20-22, San Francisco — MacWorld Expo. Contact: MacWorld Exposition, Mitch Hall Associates, P.O. Box 155, 1200 East St., Westwood, Mass. 02090; (617) 329-7466.

Jan. 22-25, Salt Lake City — 4th Telecommunications Conference. Contact: Conferences & Institutes, 2174 Annex Building, University of Utah, Salt Lake City, Utah 84112; (801) 581-5809.

Jan. 23-25, San Diego — Network Management. Contact: Frost & Sullivan, Inc., 106 Fulton St., New York, N.Y. 10038; (212) 233-1080.

Jan. 25-27, Dallas — Traffic Engineering and Network Design. Contact: International Communications Association, 12750 Merit Drive, Dallas, Texas 75251; (800) 422-4636.

Jan. 30-Feb. 3, San Diego — USENIX Association Winter 1989 Technical Conference. Contact: USENIX Association, P.O. Box 385, Sunset Beach, Calif. 90742; (213) 592-1381.

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Dear Santa: Bring PCs and open systems

continued from page 1

benefits of deregulation," such as lower cost long-distance service and greater choice. But, he said, the stocking should "have a hole in the bottom big enough to let all of the associated problems fall out," such as infighting among vendors over who is responsible for each part of the public network.

Some users are trying to make Santa's job easier by asking for specific products.

Connie Gentry, director of telecommunications at Emory University in Atlanta, is looking for a nonproprietary, digital telephone that gives phone users instructions. "The phone would tell users how to make a long-distance call, access phone mail or use a credit card to make a call," Gentry said. "There may already be a product like this available, but I don't know about it."

Doctors at Emory's medical center say they do not have the time to learn how to use the telephones there and often wind up calling Gentry's office for help, she said.

The elves of ISDN

Santa's elves had better get busy in their ISDN workshop to satisfy the needs of a number of users, including Mark Robson, data communications analyst at Milton Bradley Co. in Longmeadow, Mass.

Robson said that accelerated rollout of ISDN services would allow his company to reduce communications expenses through the replacement of underused leased lines with dial-up lines.

More detailed information on how ISDN can help Revco D.F., Inc. would bring Christmas joy to Gary Rea, manager of voice communications at the Twinsburg, Ohio-based pharmaceutical company.

"I keep hearing about all the possibilities of ISDN, but there isn't anybody who can define those for us," he said.

Don't forget the vendors

US Sprint Communications Co. has been very good this year, judging from its improved financial results. As a reward, the company did not have to wait until Dec. 25 to open its gifts, according to William Esrey, president of US Sprint and United Telecommunications, Inc.

"Our Christmas wish was fulfilled early this year when the GSA awarded 40% of the [Federal Telecommunications System] 2000 contract to US Sprint," Esrey said.

Tom Taylor, president of T-1 multiplexer-maker Avanti Communications Corp. in Newport, R.I., wants a gift he can share with others in the industry: open systems.

"Open systems is something that everybody relates to," Taylor said. "It will help us sell products, but it will also help users solve the big dilemma in managing multivendor configurations."

Banks hope to cash in on networks

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project dubbed the Customer On-line Information Network (COIN), 25 of the bank's 875 branches throughout California have been equipped with IBM Token-Ring Networks supporting IBM Personal System/2s and printers. The local nets also support gateways that provide access to Bank of America hosts.

A total of 2,241 Personal System/2s were installed over the last two years, 1,002 of which are in branches and used by both account representatives and tellers. The remainder are in a central customer service center where operators handle calls from customers requesting assistance in resolving problems with their accounts.

All branches should be equipped with platform automation equipment by mid-1990, McNabb said.

This equipment replaces Bunker Ramo Corp. terminals installed in 1975. The interactive Bunker Ramo terminals, still used in the majority of branches, support 3270 data streams and are linked via an IBM Systems Network Architecture network to the bank's hosts. These terminals support only a limited set of data entry and teller transaction functions.

Currently, the Personal System/2s enable account representatives to access the host-based CIF and prepare custom banking plans for customers.

Bank of America is testing software that will enable account representatives and customer service center workers to open new accounts using the Personal System/2s.

McNabb said the bank is reviewing plans to expand COIN to support electronic loan application entry and processing.

The bank also wants to put card reader terminals next to each Personal System/2. Customers coming into the branch will be asked to pass their Bank of America card through the terminal, which would extract the account number and display it on screen.

Account representatives would only need to enter account numbers for customers without cards and for those who did not have their cards with them. "This will get our customers more used to using a card to access their Bank of America accounts," McNabb said.

McNabb said it is too early to measure the success of COIN because it is still being tested. It is also difficult to track how many new accounts were opened as a result of account representatives pitching custom banking plans.

However, Seattle-based Seafirst Bank, a BankAmerica Corp. subsidiary, said platform automation helped it reach record earnings of $119 million for the first nine months of this year. The company's previous record earnings were $84 million in 1982.

> "Platform automation alone doesn't give you an advantage," Butler said. "It's all in how you implement it."
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"Everybody knows the concept. And everyone knows they have to do it," said Inder Singh, vice-president and manager of Seafirst's retail services and administration division.

Seafirst uses Apple Computer, Inc. Macintoshes linked to its IBM hosts to enable account representatives to open new accounts. The bank will also expand its platform automation project to support loan application entry and processing.

In addition, Seafirst is working on software to enable account representatives to devise and market custom banking plans. This approach is a shift in basic bank philosophy, Singh said. Instead of waiting for customers to come into the branch to open accounts, platform automation enables account representatives to call customers and explain the custom banking plan devised for them. "[Account representatives are] no longer order takers: They're order getters," he said.

Seafirst has roughly 2,700 Macintoshes installed in its branches throughout Washington. Those Macintoshes use Apple's AppleLine modems to access in-branch IBM 3274 cluster controllers, which provide the wide-area connections to Seafirst hosts. Software running on the Macintosh makes the Macintosh appear to the 3274 as an IBM 3278 terminal.

Payoffs for platform automation

Banks planning for platform automation also expect large payoffs.

"We believe we can do a more effective job of selling and provide better service with platform automation," said John Butler, vice-president of office information systems for Huntington National Bank, the Columbus, Ohio-based subsidiary of Huntington Bancshares, Inc.

Butler agrees with Seafirst and other banks that say the technology alone is not good enough unless coupled with a change in sales philosophy.

"Platform automation alone doesn't necessarily give you a competitive advantage," Butler said. "It's all in how you implement it."

However, he added, "In many locations, the competition is going to force you to do it."

Butler said his bank is thinking about using local network-attached microcomputers in each branch. That local net will also support a gateway that links to the bank's data center.

As an alternative, Butler said the bank will consider linking platform automation workstations to its existing teller terminal network supported by an IBM 4700 Finance Communication System, which consists of terminal controllers linked to an IBM 4702 minicomputer. The 4700 terminal controllers also support a Token-Ring Network attachment.

Doelz managers buy out troubled switch maker

By Wayne Eckerson
Staff Writer

IRVINE, Calif. — Doelz, Inc. announced last week that it has purchased the business operations of privately held Doelz Networks, Inc. for an undisclosed amount.

Doelz, Inc. is a joint venture founded recently by the management of Doelz Networks and a consortium of European companies led by Belgian Information Management (BIM), a Belgium-based systems integrator. The new company purchased the products, patents and development projects from Doelz Networks and agreed to support Doelz Networks' products installed at customer locations.

The joint venture provides Doelz's virtual circuit switch business with an infusion of badly needed capital and gives the company access to the European market. BIM will provide Doelz with expertise in network management and design, according to Doelz officials.

In September, Alpha Microsystems, Inc., a microcomputer maker based in Santa Ana, Calif., purchased an option to buy Doelz but backed out of the deal when the two companies could not agree on how to merge their top management teams.

The management of Doelz is composed largely of former Doelz Networks managers, according to a statement issued by Doelz. M.L. Doelz, Doelz Networks' founder, will serve as Doelz's chairman.

Frank Dzubeck, president of Communications Network Architects, Inc., a consultancy in Washington, D.C., said, "The marriage gives Doelz added capitalization but doesn't readily solve their biggest problem. They need to convert their proprietary switching technology to open standards like the rest of the industry."

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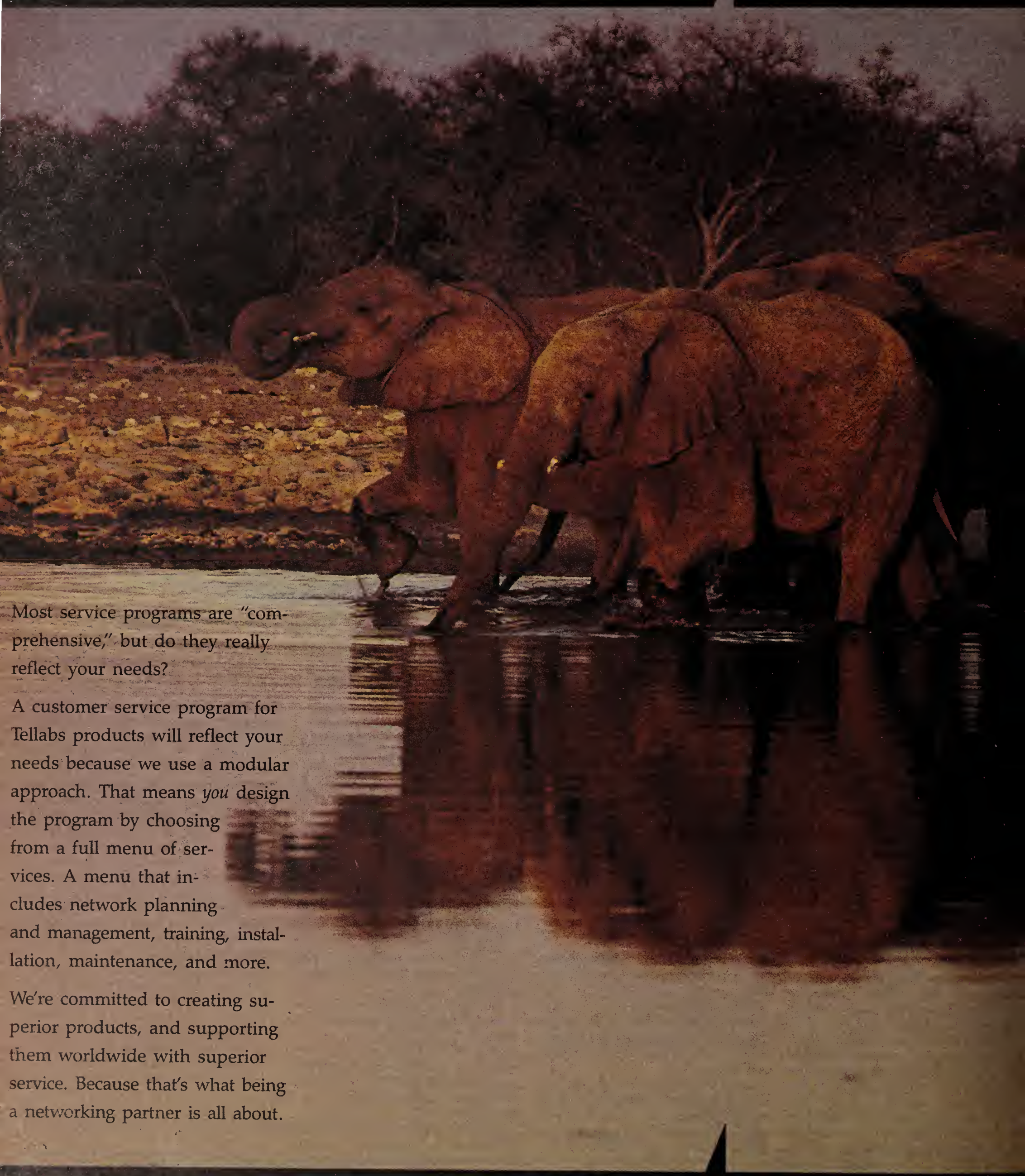

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